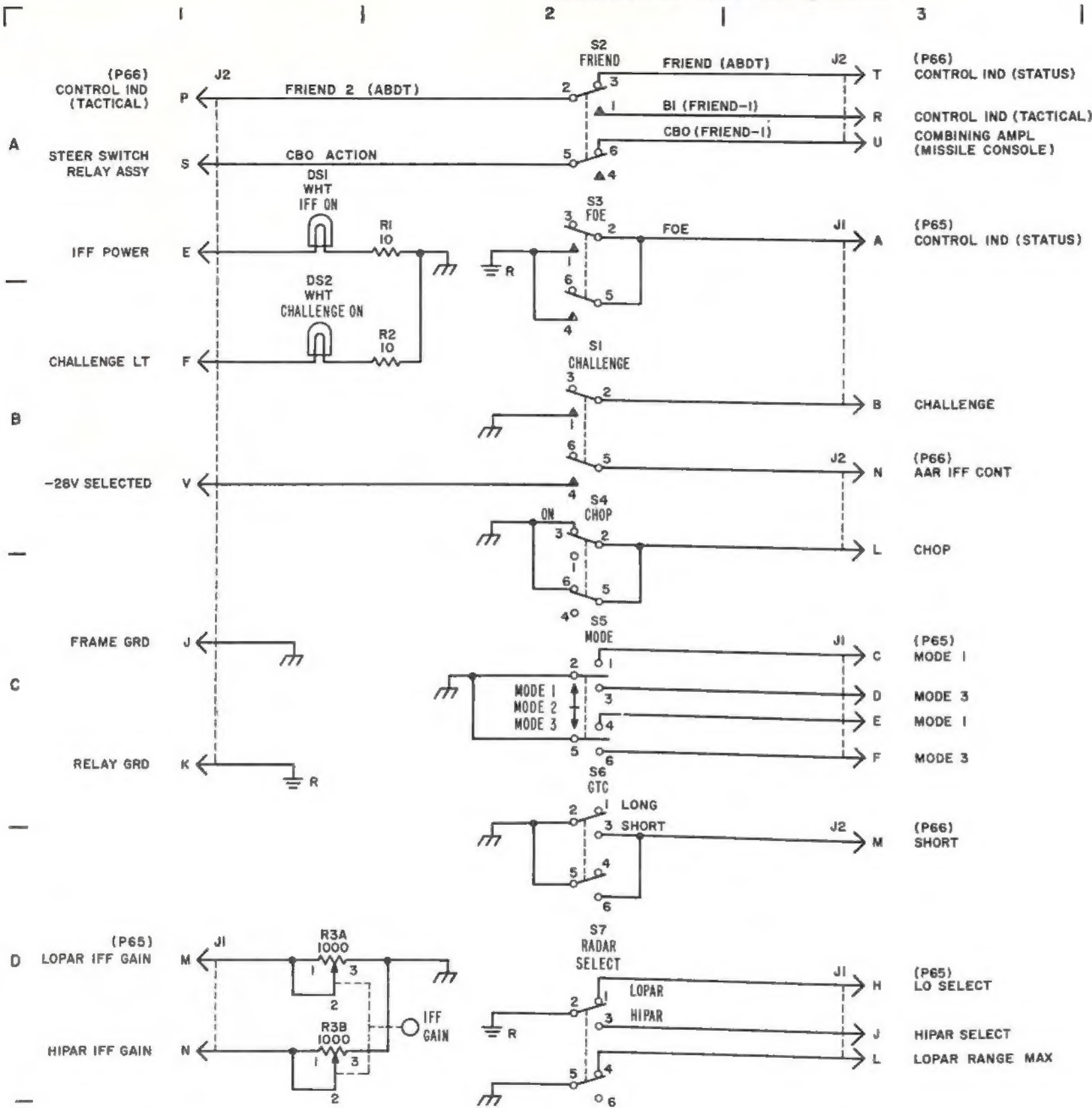


(U) LOPAR Control-Indicator 9993021—Apparatus List

Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
B1	0.01	10		300	7674819	
C1					CM35B103JN3	
CR1					7605693	
CR2					8519051	
DS1					MS25231-1819	
DS2					7605718	
DS3					8328095	
DS4					MS25237-327	
J1					9976306-2	
J2					9976306-1	
K1,K2	0.1 meg	10	2		9011925	
M1					8174005	
R1					9000886	
R2					8205674	
R3					MS35043-109	
R4					MS35043-33	
R5					MS35043-120	
R6					9144321	
R7					MS35044-88	
R8					MS35043-130	
S1	10,000	5	1/2		MS35059-27	
S2					9144148	
S3					8005247	
S4					9001465	
S5					9001495	
S6					8512470	
S7					9000774	
S8					9011495	
S9					9011494	
S10					9988814	

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- NOTES:
1. ALL VALUES ARE EXPRESSED IN OHMS UNLESS OTHERWISE INDICATED
 2. UNUSED FACILITIES NOT SHOWN IN BODY OF SCHEMATIC ARE AS FOLLOWS:
J1-K,P,R,S,T,U,V
J2-A,B,C,D,H

Figure 84 (U). IFF control-indicator 9156348—schematic diagram (U).

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ORD G59836

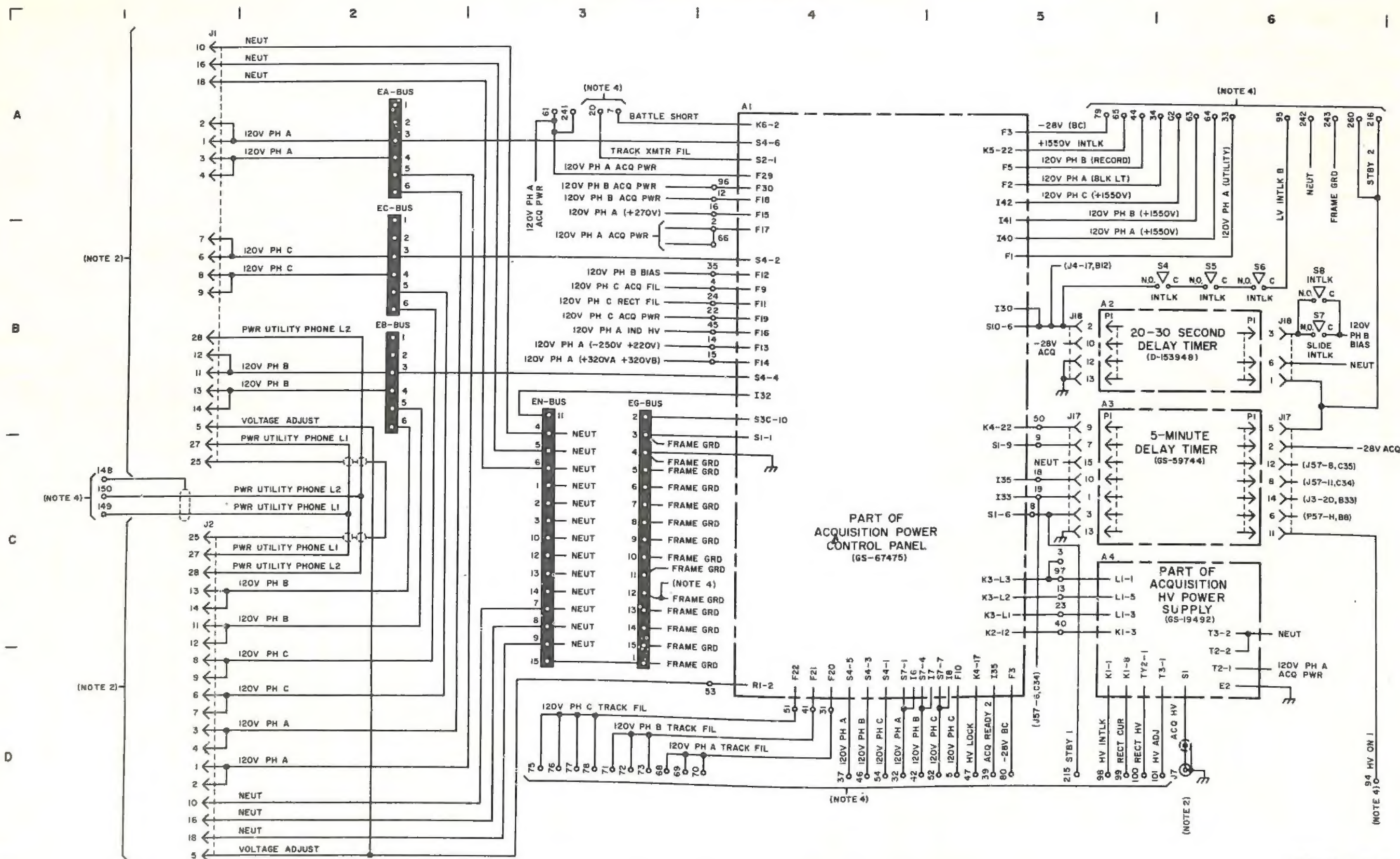


Figure 86 (U). Director station group 9995968—schematic diagram (sheet 1 of 8) (U).

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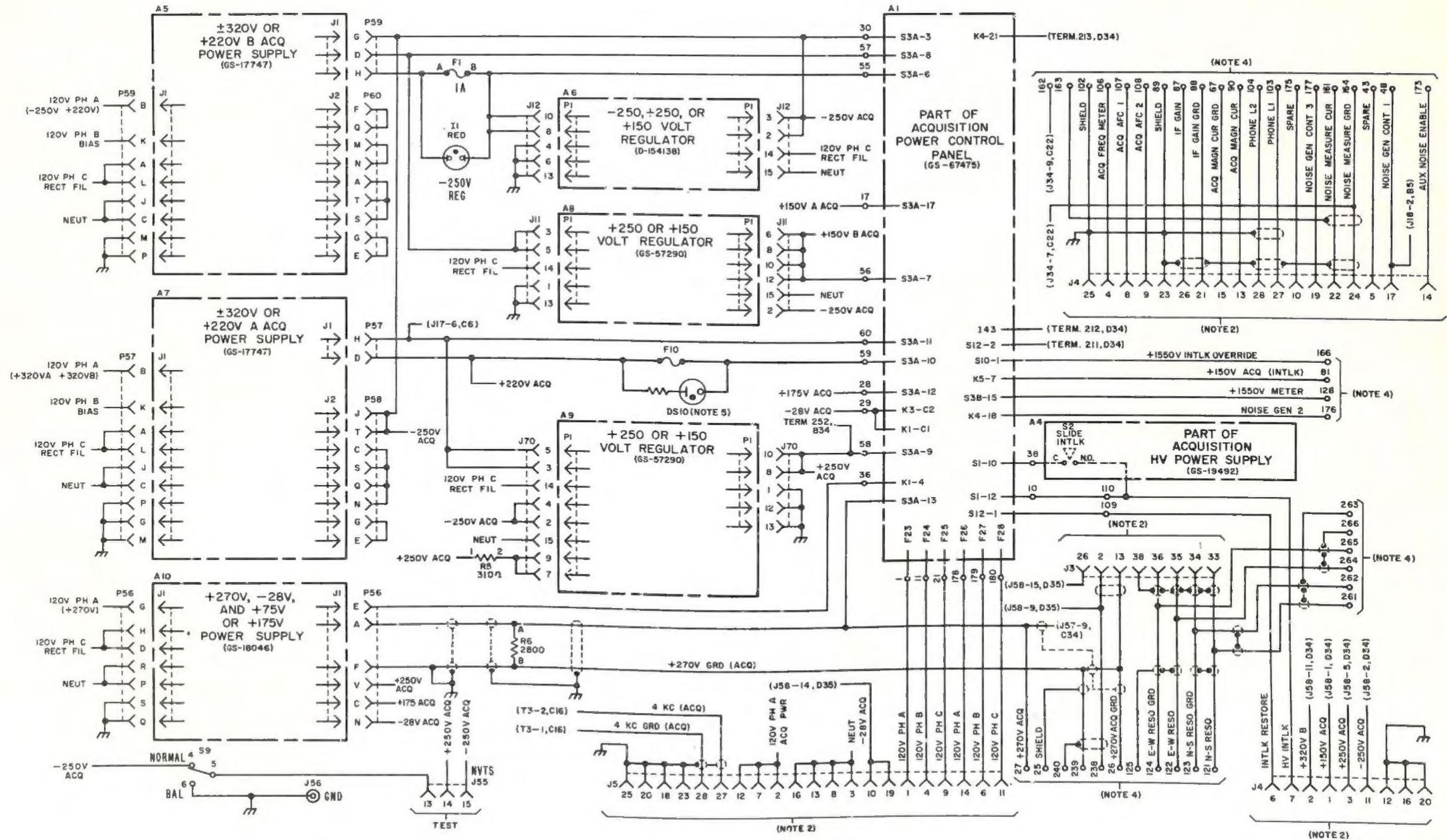
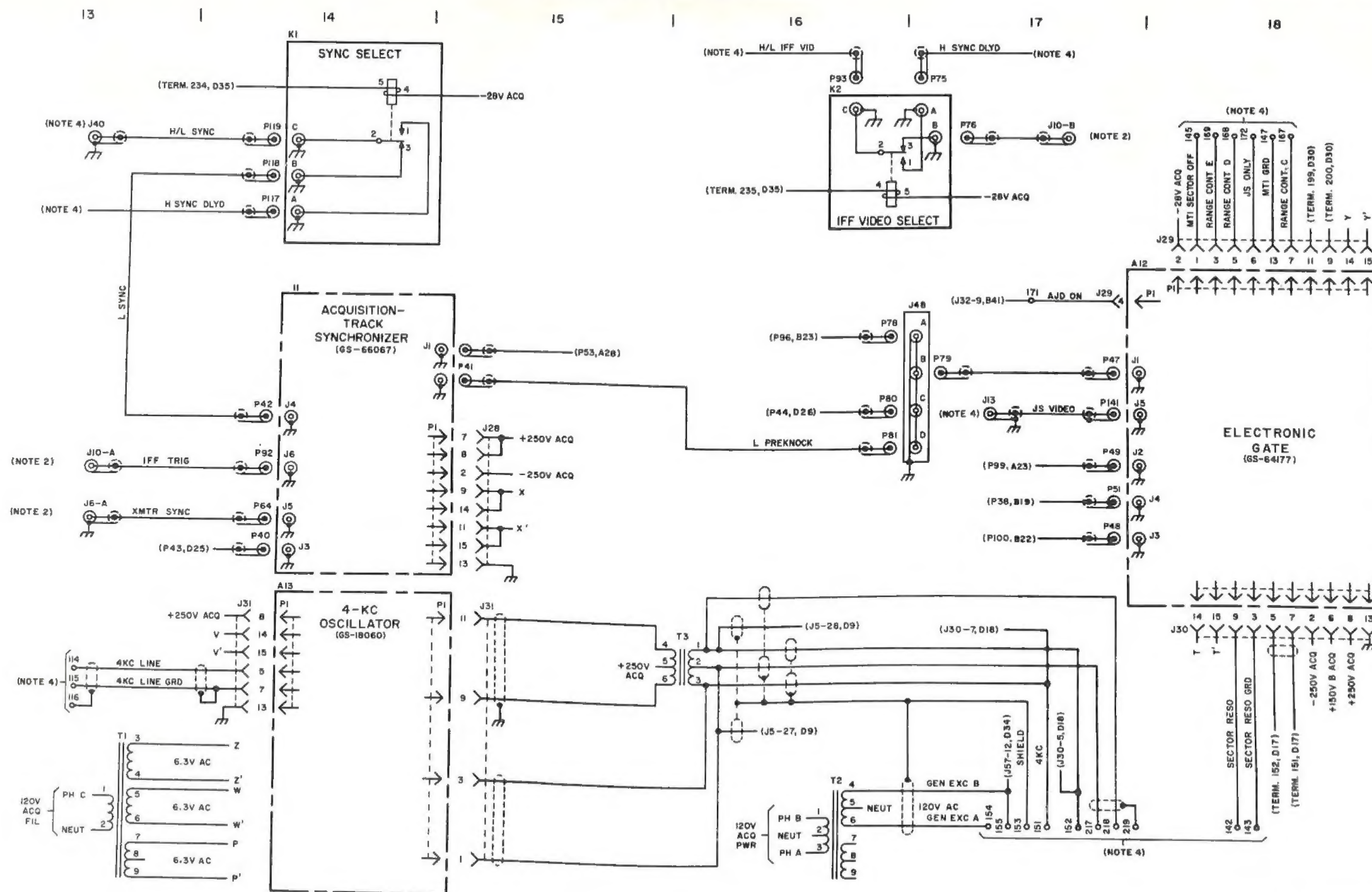


Figure 86 (U). Continued (sheet 2 of 8).

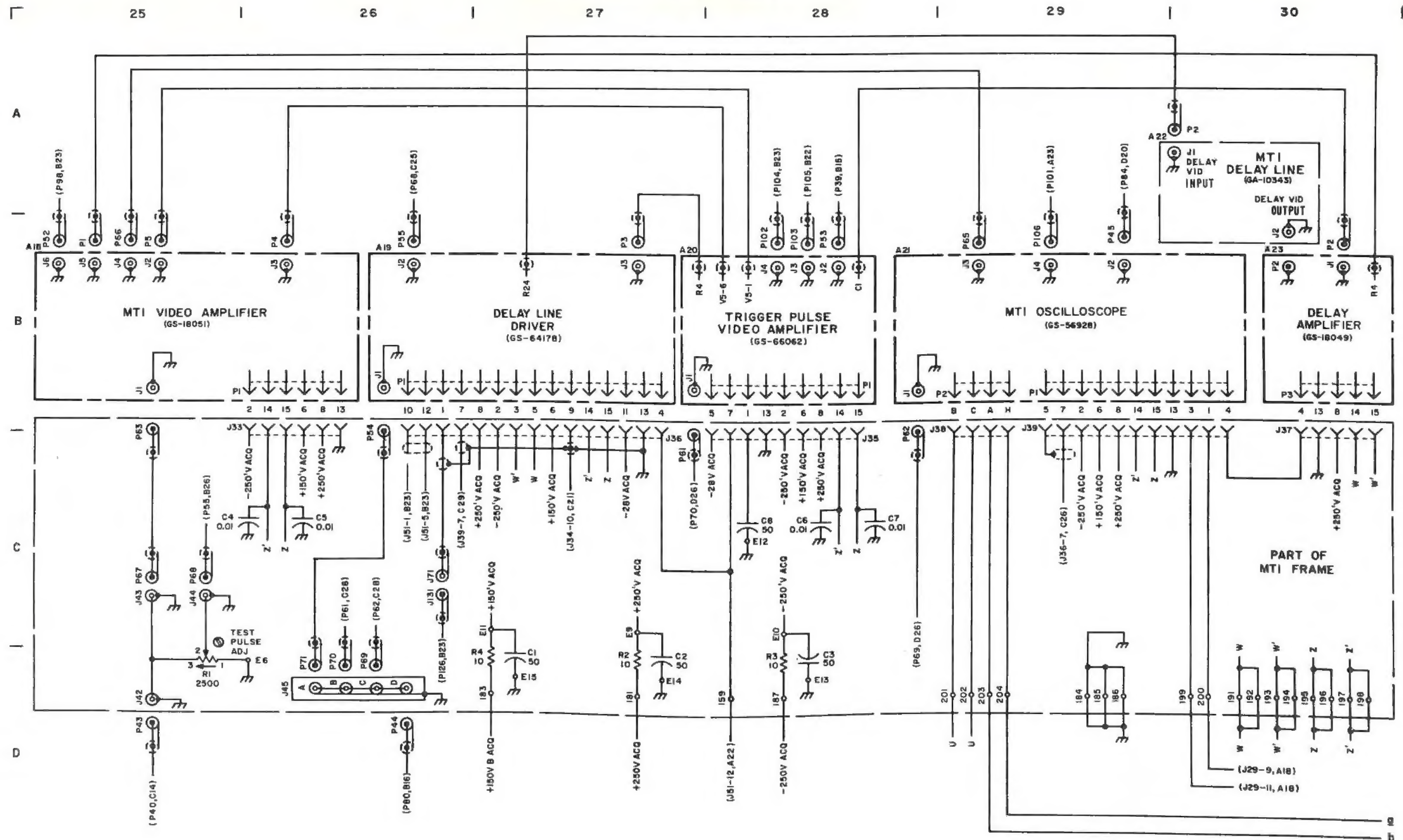
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■ Figure 88 (U). Continued (sheet 3 of 8).

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■ *Figure 86 (U). Continued (sheet 5 of 8).*

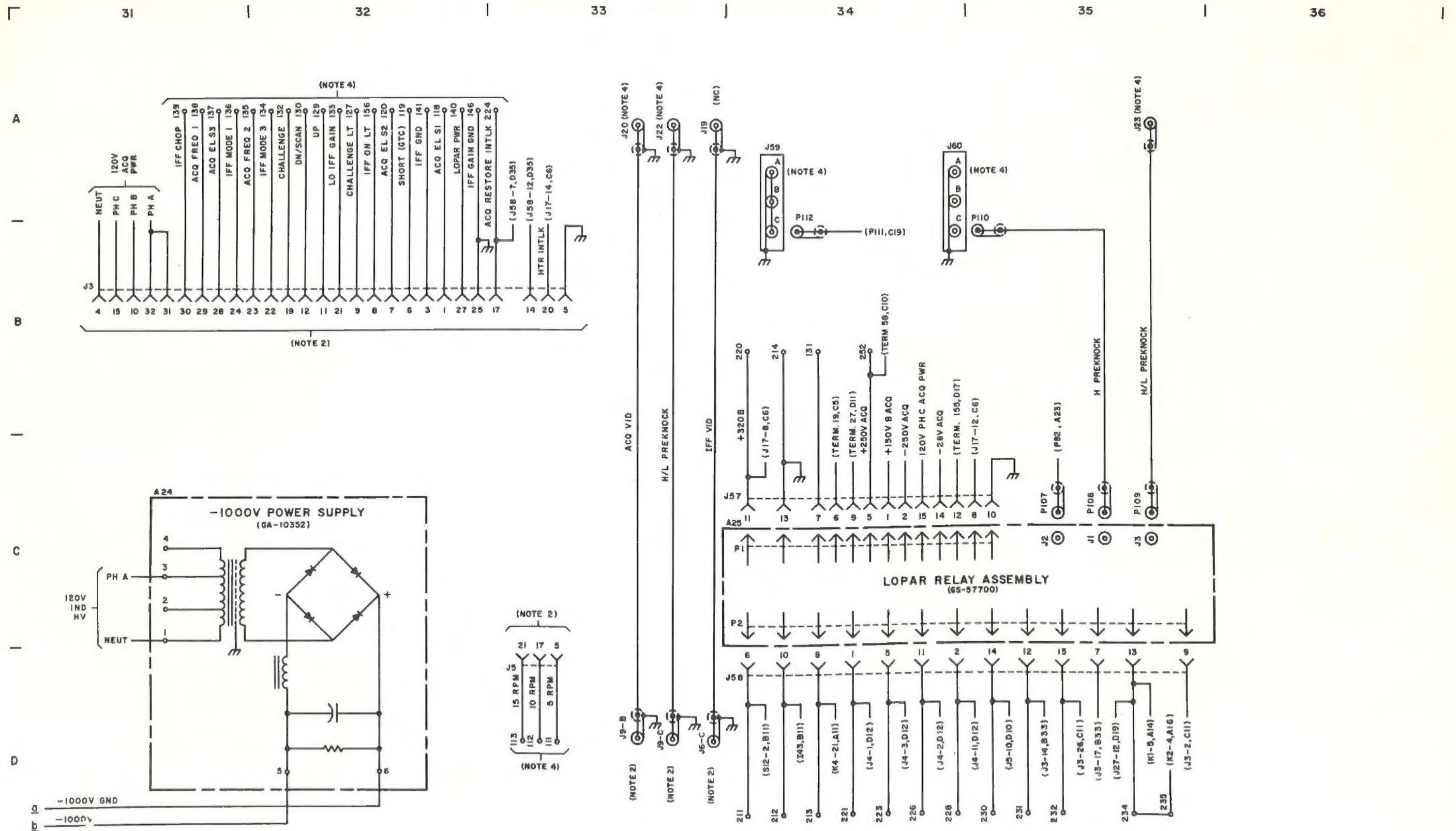


Figure 86 (U). Continued (sheet 6 of 8).

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NOTES:

1. ALL VALUES ARE EXPRESSED IN OHMS OR MICRO-FARADS UNLESS OTHERWISE INDICATED

2. REFER TO TM9-1430-254-20/2

3. UNUSED FACILITIES NOT SHOWN IN BODY OF SCHEMATIC ARE AS FOLLOWS:

J1-15,17,19,20,21,22,23,24,26

J2-15,17,19,20,21,22,23,24,26

J3-16,18,37

J4-18

J5-22,24,26

J11-4,7,9,11

J12-1,5,7,9,11,12

J14

J17-4

J18-4,5,7,8,9,11,14,15

J27-3,5,8,10

J28-1,5,6,10,12

J29-8,10,12

J30-1,4,10,11,12

J31-2,4,6,10,12

J32-8

J33-1,3,4,5,7,9,10,11,12

J34-1,3,5,7,8,9,11,12

J35-3,4,9,10,11,12

J37-1,2,3,5,6,9,10

J38-D,E,F

J39-9,10,11,12

J51-10,11

J52

J55-16

J57-3,4

J58-3,4

J66-1,11,12

J70-6,11

P56-B,J,K,L,M,T,U

P57-E,F,N

P58-A,B,D,F,H,K,L,M,P,R,U,V

P59-E,F,N

P60-B,C,D,H,J,K,L,P,R,U,V

4. REFER TO SCHEMATIC OF TRAILER MOUNTED DIRECTOR STATION (GS-67471)9993057.

5. RESISTORS ASSOCIATED WITH NEON INDICATORS ARE 0.1 MEG AND ARE INTEGRAL PARTS OF LAMP SOCKETS A8328095

6. FUSES DESIGNATED "S" MUST BE OF SLO-BLO TYPE

A

B

C

D

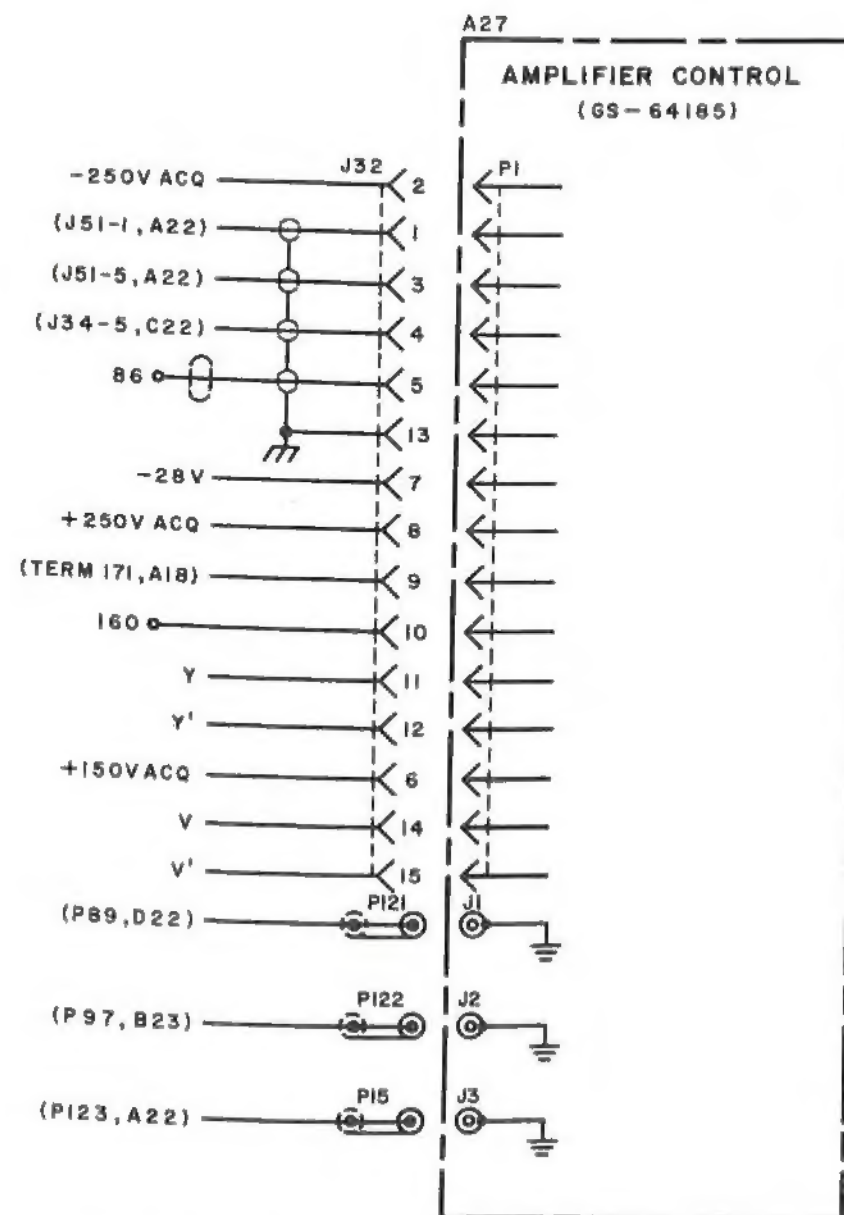
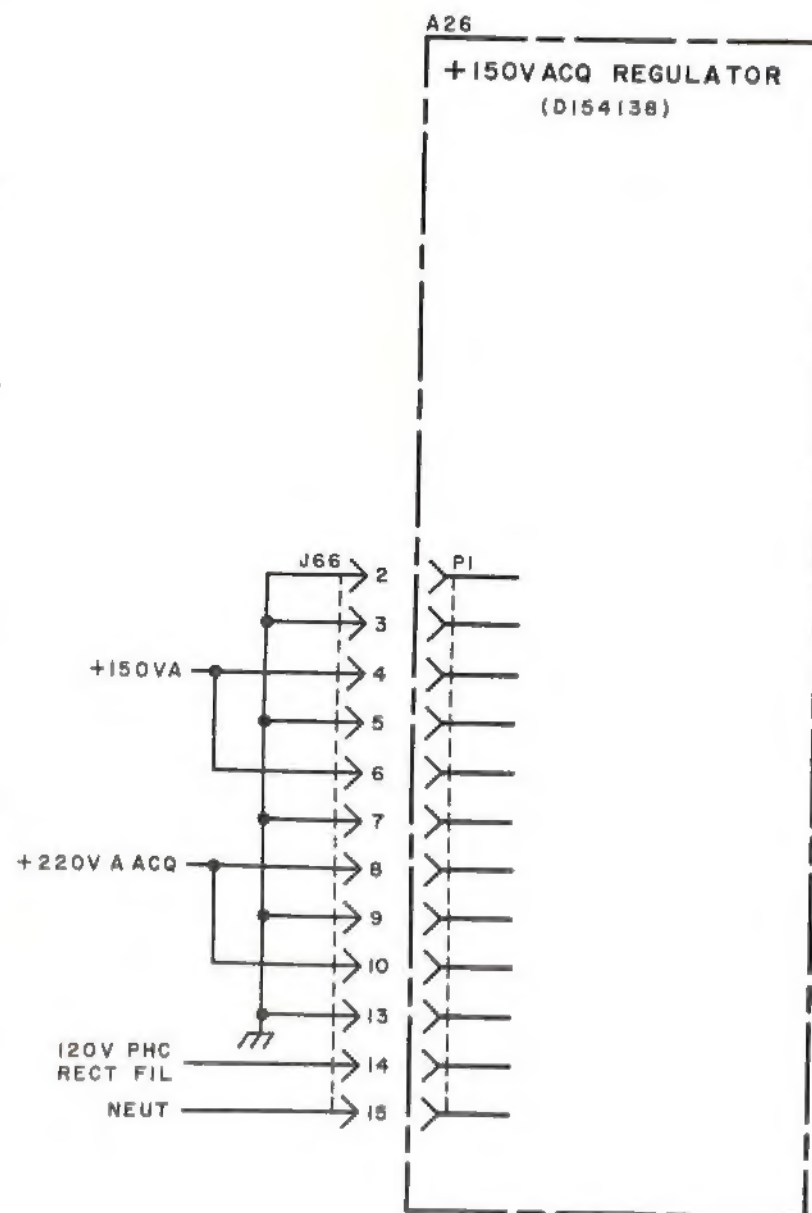


Figure 86 (U). Continued (sheet 7 of 8).

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(U) INDEX OF TERMINALS—DIRECTOR STATION GROUP

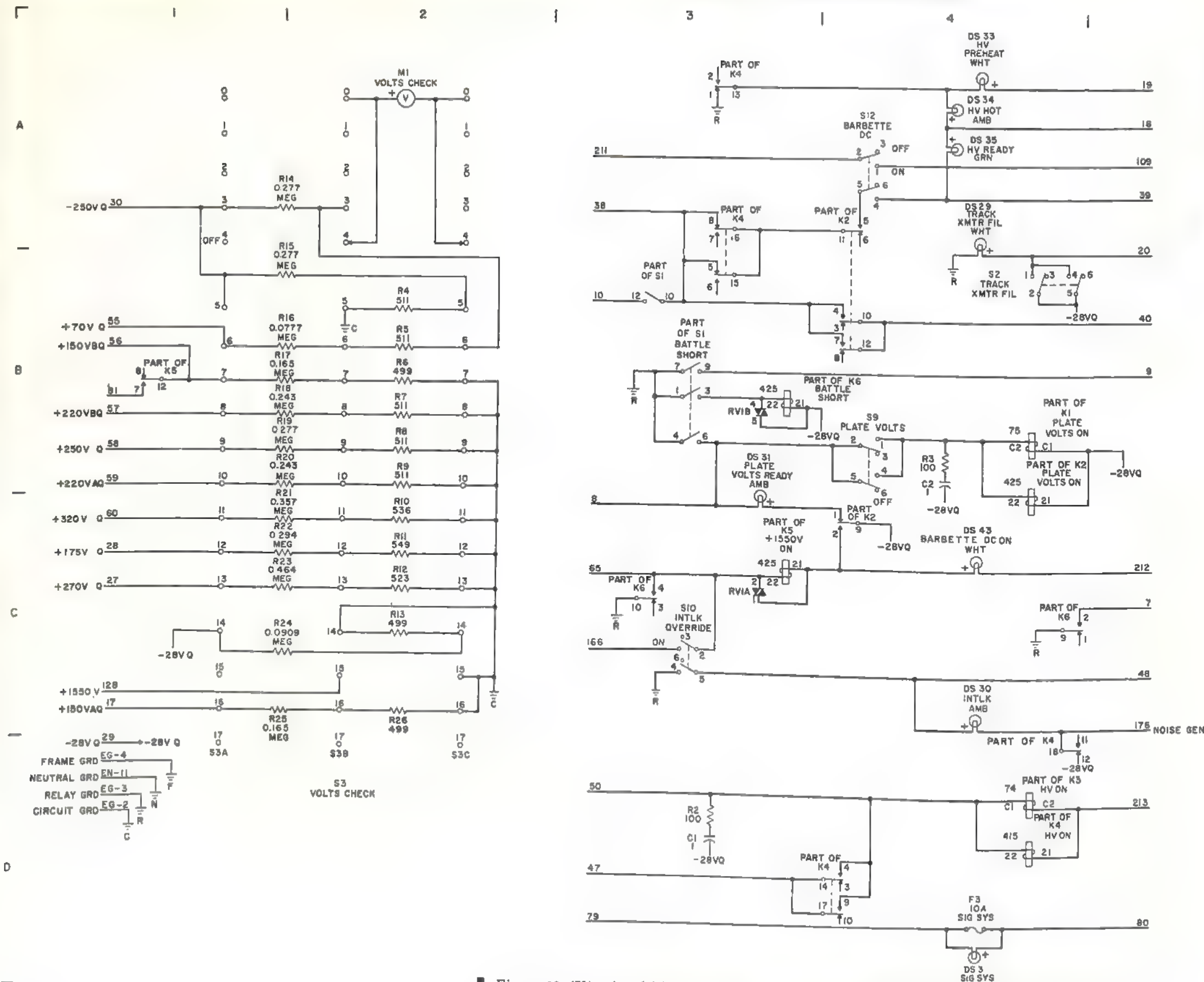
TERMINAL	LOCATION	TERMINAL	LOCATION	TERMINAL	LOCATION	TERMINAL	LOCATION	TERMINAL	LOCATION	TERMINAL	LOCATION
1	C10	55	A10	109	C11	163	C22	217	D17	1181	NC
2	B4	56	B10	110	C11	164	A12	218	D17	1182	NC
3	C5	57	A10	111	D33	165	NC	219	D17	1183	NC
4	B4	58	C10	112	D33	166	B12	220	B34	1184	NC
5	D5	59	B10	113	D33	167	A18	221	D34		
6	NC	60	B10	114	C13	168	A18	222	NC		
7	A3	61	A3	115	D13	169	A18	223	D34		
8	C5	62	A6	116	D13	170	NC	324	A33		
9	C5	63	A6	117	A23	171	B17	225	NC		
10	C11	64	A6	118	A32	172	A18	226	D34		
11	C10	65	A5	119	A32	173	A12	227	NC		
12	A4	66	B4	120	A32	174	NC	228	D34		
13	C5	67	A12	121	D12	175	A12	229	NC		
14	B4	68	D3	122	D11	176	B12	230	D35		
15	B4	69	D3	123	D11	177	A12	231	D35		
16	A4	70	D4	124	D11	178	C11	232	D35		
17	B10	71	D3	125	D11	179	C11	233	NC		
18	C5	72	D3	126	NC	180	C11	234	D35		
19	C5	73	D3	127	A32	181	D27	235	D35		
20	A3	74	NC	128	B12	182	C22	236	NC		
21	C10	75	D3	129	A32	183	D27	237	NC		
22	B4	76	D3	130	A32	184	D29	238	D11		
23	C5	77	D3	131	B34	185	D29	239	D11		
24	B4	78	D3	132	A32	186	D29	240	D11		
25	D11	79	A5	133	A32	187	D28	241	A3		
26	D11	80	D5	134	A32	188	NC	242	A6		
27	D11	81	B12	135	A32	189	NC	243	A6		
28	B10	82	NC	136	A31	190	NC	244	NC		
29	B10	83	NC	137	A31	191	D30	245	NC		
30	A10	84	NC	138	A31	192	D30	246	NC		
31	D4	85	NC	139	A31	193	D30	247	NC		
32	D4	86	NC	140	A32	194	D30	248	NC		
33	A6	87	A11	141	A32	195	D30	249	NC		
34	A6	88	A12	142	D18	196	D30	250	NC		
35	B4	89	A11	143	D18	197	D30	251	D19		
36	C10	90	A12	144	NC	198	D30	252	B34		
37	D4	91	D19	145	A18	199	D30	253	NC		
38	C11	92	NC	146	A32	200	D30	254	NC		
39	D5	93	NC	147	A18	201	D29	255	NC		
40	C5	94	D6	148	C1	202	D29	256	NC		
41	D4	95	A6	149	C1	203	D29	257	NC		
42	D4	96	A4	150	C1	204	D29	258	NC		
43	A12	97	C5	151	D17	205	NC	259	NC		
44	A5	98	D5	152	D17	206	NC	260	A6		
45	B4	99	D5	153	D17	207	NC	261	C12		
46	D4	100	D5	154	D17	208	NC	262	C12		
47	D5	101	D6	155	D17	209	NC	263	C12		
48	A12	102	A11	156	A32	210	NC	264	C12		
49	NC	103	A12	157	NC	211	D34	265	C12		
50	B5	104	A12	158	NC	212	D34	266	C12		
51	D4	105	NC	159	D28	213	D34	267	NC		
52	D5	106	A11	160	NC	214	B34	268	NC		
53	D4	107	A11	161	A12	215	D5	269	NC		
54	D4	108	A11	162	C22	216	A6	270	NC		

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Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
A1					9995971	GS-67475
A2					7620519	D-153948
A3					9986425	GS-59744
A4					9139109	GS-57430
A5					9140697	GS-17747
A6					7620552	D-154138
A7					9140697	GS-17747
A8, A9					9137641	GS-57290
A10					9986425	GS-18046
A11					9989392	GS-66067
A12					9990560	GS-64177
A13					8512062	GS-18060
A14					9989191	GS-66028
A15					9990600	GS-64176
A16					9990755	GS-64184
A17					8513754	
A18					8513331	GS-18051
A19					9990570	GS-64178
A20					9989353	GS-66062
A21					9137928	GS-56928
A22					8519066	GA-10343
A23					9007731	GS-18049
A24					8519068	GS-10352
A25					9143901	GS-57700
A26					7620552	D-154138
A27					9990768	GS-64185
C1 thru C3	50	+50 -10		400	CE41C5000	
C4 thru C7	0.01	10		400	CP10A3EE103K	
C8	50	+50 -10		400	CE41C500Q	
DS1, DS10			1/25	125	7605718	
EA thru EC					8009011	
EG, EN					8159258	
E6					8516062	
E9 thru E11					8175658	
E12 thru E15					8175334	
F1, F10	1 amp				MS90082-1	
J1, J2					7632526	
J3					7632529	
J4, J5					7632527	
J6					7606490	
J7					9000848	
J8 thru J10					7606490	
J11, J12					7599367	
J13					7599662	
J14					9007754	
J15					7599662	
J17, J18					7599367	
J19 thru J26					7599662	
J27 thru J31					7599367	
J32					9150422	
J33 thru J37					7599367	
J38					8519237	
J39					7599367	
J40					7599662	
J41 thru J44					MS27035-625B	
J45					9003874	
J46					8519232	
J48					9003874	
J49					8519232	

Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
J50					9003874	
J51					7599367	
J52, J53					7599662	
J54					9003874	
J55					7583665	
J56					8175215	
J57, J58					7599367	
J59, J60					8519232	
J66					9150422	
J67					8510232	
J70					9150422	
J71					MS27035-625B	
K1, K2					9976399	
P15					9144413	
P32 thru P55					9144413	
P56					9003507	
P57					9003506	
P58					9003507	
P59					9003506	
P80					7611377	
P61 thru P73					9144413	
P74					7601757	
P76 thru P84					9144413	
P85					7601757	
P86 thru P89					9144413	
P91, P92					9144413	
P94 thru P112					9144413	
P115					9144413	
P118 thru P124					9144413	
P126 thru P128					9144413	
P130					8024493	
P131					9144413	
P141					9144413	
R1	2500	10	2		8175592	
R2 thru R4	10	5	2		MS35045-39	
R5	310	5	18		RW33G311	
R6	2800	5	37		RW22G282	
S4 thru S6					7602749	
S7					8017760	
S8					7602749	
S9					9001495	
T1					7605345	
T2					8011006	
T3					7605549	
T4					8516337	
T5					8519067	
T6					8015382	
TB100					7634156	
TB101 thru TB124					7634159	
Z62					9008115	

Part of Z62



NOTES

1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATION WITH THE UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
2. RESISTORS ASSOCIATED WITH NEON INDICATORS ARE 0.1 MEG AND ARE INTEGRAL PARTS OF LAMP SOCKETS A8328095.
3. UNUSED FACILITIES NOT SHOWN IN BODY OF SCHEMATIC ARE AS FOLLOWS:
K6-5, 6, 7, 8, 11 & 12
RVI-3, 6, 7, 8, 9, 10, 11
S8-2 THRU 9 INCL
4. NUMBERS ON ENDS OF LEADS INDICATE TERMINALS TO WHICH THE LEADS ARE CONNECTED IN FINAL ASSEMBLY OF DIRECTOR STATION GROUP.

Figure 88 (U). Acquisition power control panel 8995971—schematic diagram (sheet 1 of 2) (U).

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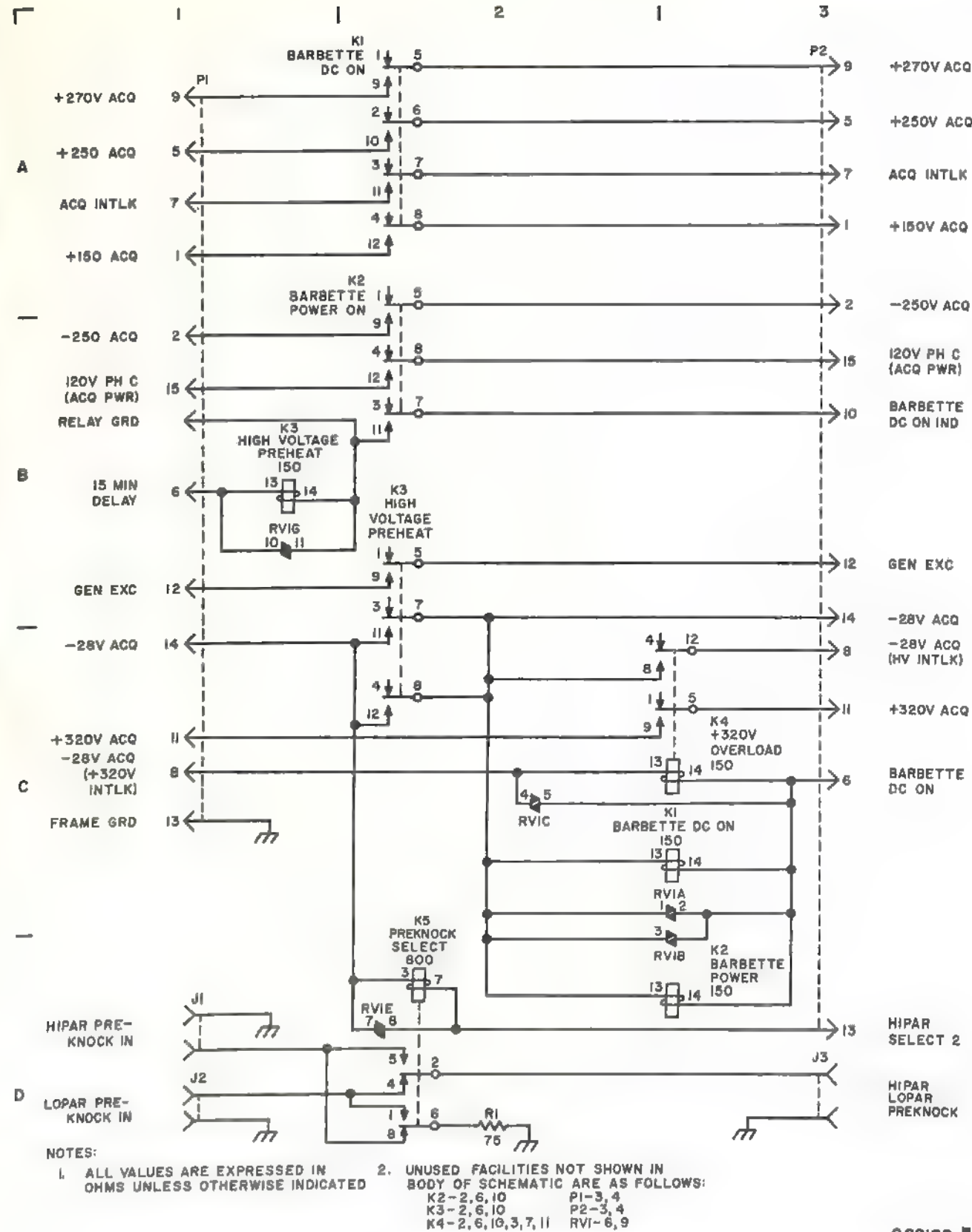


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Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
C1, C2	1.0	10		600	7631713	CP69B1EF105K
I1, I2			1/25	125	7605718	BA-10007-6
I3				28	MS25231-1819	BA-10010-11
I5 thru I28			1/25	125	7605718	BA-10007-6
						(24 required)
I29 thru I31				28	MS25231-1819	BA-10010-11
I32			1/25	125	7605718	BA-10007-6
I33 thru I35				28	MS25231-1819	BA-10010-11
I36 thru I42			1/25	125	7605718	BA-10007-6
						(7 required)
I43				28	MS25231-1819	BA-10010-11
F1	20			125	8175384	BA-10082-148
F2	5			250	MS90082-4	F06G5R00A
F3, F5	10			250	MS90082-5	F06G10R0A
F6 thru F8	10			32	MS90081-8	F05A10R0B
F9, F10	5			250	MS90082-4	F06G5R00A
F11	10			250	MS90082-5	F06G10R0A
F12	3			250	MS90082-3	F06G3R00A
F13, F14	15			250	MS90082-6	F06G15R0A
F15	3			250	MS90082-3	F06G3R00A
F16	0.5			250	8175351	
F17	20			125	8175384	
F18	10			250	MS90082-5	BA-10082-148
F19	15			250	MS90082-6	F06G10R0A
F20 thru F22	30			250	MS90088-14	F06G15R0A
F23 thru F25	20			32	MS90081-10	F15G30R0A
F26 thru F28	5			32	MS90080-5	F05A20R0B
F29 thru F31	15			250	MS90082-6	F04A5R00B
F32 thru F34	0.5			250	8175351	F06G15R0A
K1	75			28	7608169	GA-30003L1
K2	425			28	9009252	G-243879-1
K3	74			28	8010156	GA-51038L1
K4	415			28	8175082	BA-98259
K5, K6	425			28	9009252	G-243879-1
M1					8019154	GA-52545
M2					8011120	GA-51138
R1	250	10	50		8177342	RP151RD251KK
R2, R3	100	10	2		MS35045-7	RC42GF101K
R4, R5	511	1	1		8513991	D-176176A
R6	499	1	1		8516324	D-176176A
R7 thru R9	511	1	1		8513991	D-176176A
R10	536	1	1		8515690	D-176176A
R11	549	1	1		8516326	D-176176A
R12	523	1	1		8515689	D-176176A
R13	499	1	1		8516324	D-176176A
R14, R15	0.277 meg	1	1		7599475	D-176176A
R16	0.0777 meg	1	1		8515688	D-176176A
R17	0.165 meg	1	1		8017799	D-176176A
R18	0.243 meg	1	1		8017994	D-176176A
R19	0.277 meg	1	1		7599475	D-176176A
R20	0.243 meg	1	1		8017994	D-176176A
R21	0.357 meg	1	1		8516322	D-176176A
R22	0.294 meg	1	1		8017786	D-176176A
R23	0.464 meg	1	1		8516344	D-176176A
R24	0.0909 meg	1	1		8023282	D-176176A
R25	0.165 meg	1	1		8017799	D-176176A
R26	499	1	1		8516324	D-176176A
RV1					7599075	D-176692
S1					7602621	BA-98051

Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
S2					9001495	G-243485-4
S3					8016523	GA-51035L1
S4, S5					8011078	GA-51037L1
S6					8011077	GA-51036
S7					7599795	BA-98050
S8					7614973	BO-710841
S9					9001495	G-243485-4
S10					9000774	G-243486-17
S11, S12					9001495	G-243485-4

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(U). LOPAR Relay Assembly 9143901—Apparatus List

Reference designation	Ordinance part No.	Part description
J1, J2, ... J3	8531071	CONNECTOR, RECEPTACLE, ELECTRICAL: stght, 1 female cont
K1, K2, ... K3, K4	9007313	RELAY ARMATURE: 4 pdt, cont 110v ac or 26v dc, 5 amp, coil 26v dc, 150 ohm
K5	8631722	RELAY, ARMATURE: 5 amp, 26v dc or 110v ac, 800 ohm
P1, P2	9150421	CONNECTOR, RECEPTACLE, ELECTRICAL: rect, 15 male cont
R1	MS35043-60	RESISTOR, FIXED, COMPOSITION: 1/2w, 75 ohm ±5%, type RC20GF750J
RV1	7599075	RESISTOR, VOLTAGE SENSITIVE: 21v dc min, 32v dc max reqd to pass 5 ma

G82102

Figure 89 (U). LOPAR relay assembly 9143901—schematic diagram. (U).

NOTES

1. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS
CAPACITANCE VALUES ARE IN MICROFARADS.
2. UNUSED FACILITIES NOT SHOWN ON BODY OF SCHEMATIC ARE AS FOLLOWS:
KI-1,2,6
PI-3,5,8,10

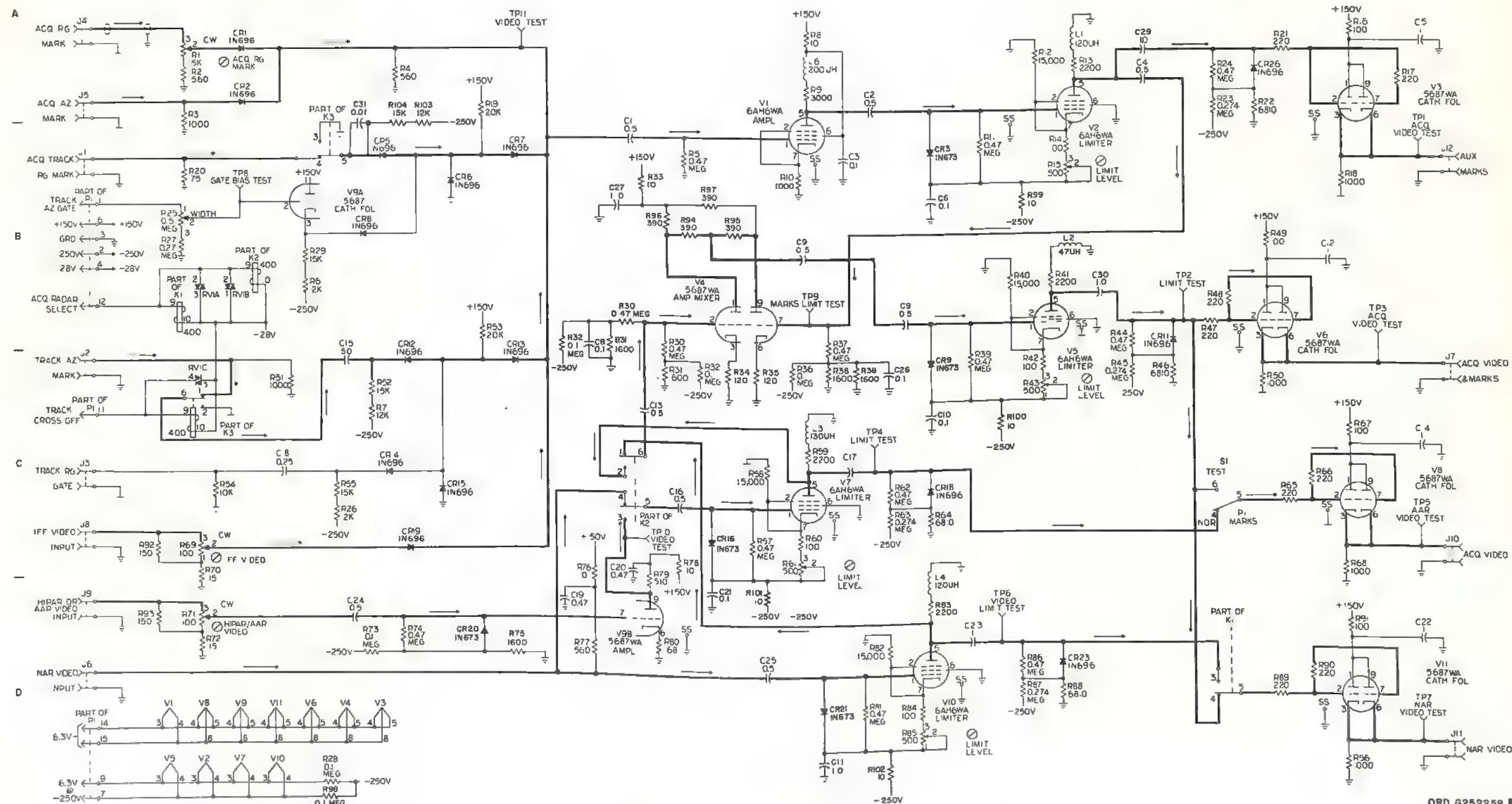


Figure 92 (U). Video and mark mixer 9989191—schematic diagram (U).

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(U) Video and Mark Mixer 9989191—Apparatus List

Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
C1	0.5	20		200	9158151-1	
C2	0.5	10		600	CP69B1EF504K1	
C3	0.1	10		600	9144116	
C4	0.5			200	9158151-1	
C5	1	10		400	8515939	
C6	0.1	10		600	9144116	
C8	0.1	10		600	9144116	
C9	0.5	10		600	CP69B1EF504K1	
C10	0.1	10		600	9144116	
C11	1	10		600	CP69B1EF105K1	
C12	1	10		400	8515939	
C13	0.5	20		200	9158151-1	
C14	1	10		400	8515939	
C15	50	+20 -10		60	8007692	
C16	0.5	10		600	CP69B1EF504K1	
C17	1	10		600	CP69B1EF105K1	
C18	0.25	20		350	9003937	
C19,C20	0.47	20		400	8175944	
C21	0.1	10		600	9144116	
C22	1	10		400	8515939	
C23	1	10		600	CP69B1EF105K1	
C24	0.5	20		200	9158151-1	
C25	0.5	10		600	CP69B1EF504K1	
C26	0.1	10		600	9144116	
C27	1	10		600	CP69B1EF105K1	
C29,C30	1	20		200	9002781	
CR1,CR2					1N696	
CR3					9016939	
CR5 thru CR8					1N696	
CR9					9016939	
CR11 thru CR15					1N696	
CR16					9016939	
CR18,CR19					1N696	
CR20,CR21					9016939	
CR23					1N696	
CR26					1N696	
J1 thru J12					MS27035-625B	
K1 thru K3	400				9011925	
L1	120 μh				9024735	
L2	47 μh				8520587	
L3	130 μh				9139026	
L4	120 μh				9024735	
L6	200 μh				9156840-12	
P1					9980454	
R1	5000	10	1/2		9138853	
R2	560	10	1/2		MS35043-202	
R3	1000	10	1/2		MS35043-13	
R4	560	5	1/2		MS35043-81	
R5	0.47 meg	10	1/2		MS35043-29	
R6,R7	12,000	5	2		MS35045-113	
R8	10	10	1/2		MS35043-1	
R9	3000	5	1/2		RC20GF302J	
R10	1000	10	1/2		MS35043-13	
R11	0.47 meg	10	1/2		MS35043-29	
R12	15,000	5	2		MS35045-115	
R13	2200	5	2		RC42GF222J	
R14	100	10	1/2		MS35043-7	
R15	500	10	1/2		9722385	

(U) Video and Mark Mixer 9989191—Apparatus List—Continued

Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
R16	100	10	1/2		MS35043-7	
R17	220	10	1/2		MS35043-9	
R18	1000	10	1/2		MS35043-13	
R19	20,000	5	2		MS35045-118	
R20	75	5	1/2		MS35043-60	
R21	220	10	1/2		MS35043-9	
R22	6810	1	1/2		9010171	
R23	0.27 meg	1	1/2		8626918	
R24	0.47 meg	10	1/2		MS35043-29	
R25	0.5 meg	10	1/2		9144158	
R26	12,000	5	2		MS35045-113	
R27	0.27 meg	5	1/2		MS35043-145	
R28	0.1 meg	10	1/2		MS35043-25	
R29	15,000	5	2		MS35045-115	
R30	0.47 meg	10	1/2		MS35043-29	
R31	1600	5	1/2		MS35043-92	
R32	0.1 meg	5	2		MS35045-135	
R33	10	10	1/2		MS35043-1	
R34,R35	120	5	1/2		MS35043-65	
R36	0.1 meg	5	2		MS35045-135	
R37	0.47 meg	10	1/2		MS35043-29	
R38	1600	5	1/2		MS35043-92	
R39	0.47 meg	10	1/2		MS35043-29	
R40	15,000	5	2		MS35045-115	
R41	2200	5	2		RC42GF222J	
R42	100	10	1/2		MS35043-7	
R43	500	10	1/2		9722385	
R44	0.47 meg	10	1/2		MS35043-29	
R45	0.274 meg	1	1/2		8626918	
R46	6810	1	1/2		9010171	
R47,R48	220	10	1/2		MS35043-9	
R49	100	10	1/2		MS35043-7	
R50,R51	1000	10	1/2		MS35043-13	
R52	15,000	5	2		MS35045-115	
R53	20,000	5	2		MS35045-118	
R54	1000	5	1/2		MS35043-111	
R55	15,000	5	2		MS35045-115	
R56	1000	10	1/2		MS35043-13	
R57	0.47 meg	10	1/2		MS35043-29	
R58	15,000	5	2		MS35045-115	
R59	2200	5	2		RC42GF222J	
R60	100	10	1/2		MS35043-7	
R61	500	10	1/2		9722385	
R62	0.47 meg	10	1/2		MS35043-29	
R63	0.274 meg	1	1/2		8626918	
R64	6810	1	1/2		9010171	
R65,R66	220	10	1/2		MS35043-9	
R67	100	10	1/2		MS35043-7	
R68	1000	10	1/2		MS35043-13	
R69	100	10	1/2		9144109	
R70	15	5	1/2		MS35043-43	
R71	100	10	1/2		9144109	
R72	15	5	1/2		MS35043-43	
R73	0.1 meg	5	1		MS90194-97	
R74	0.47 meg	10	1/2		MS35043-29	
R75	1600	5	1/2		MS35043-92	
R76	10	10	1/2		MS35043-1	
R77	560	10	1/2		MS35043-202	

(U) Video and Mark Mixer 9989191—Apparatus List—Continued

Ref design	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
R78	10	10	1/2		MS35043-1	
R79	510	5	1/2		MS35043-80	
R80	68	5	1/2		MS35043-59	
R81	0.47 meg	10	1/2		MS35043-29	
R82	15,000	5	2		MS35045-115	
R83	2200	5	2		RC42GF222J	
R84	100	10	1/2		MS35043-7	
R85	500	10	1/2		9722385	
R86	0.47 meg	10	1/2		MS35043-29	
R87	0.274 meg	1	1/2		8626918	
R88	6810	1	1/2		9010171	
R89,R90	220	10	1/2		MS35043-9	
R91	100	10	1/2		MS35043-7	
R92,R93	150	5	1/2		MS35043-67	
R94 thru R97	390	5	1/2		MS35043-77	
R98	0.1 meg	10	1/2		MS35043-25	
R99 thru R102	10	10	12		MS35043-1	
R103	12,000	5	2		MS35045-113	
R104	15,000	5	2		MS35045-115	
RV1					8515017	
S1					9001495	
TP1 thru					9976477	
TP11						
V1,V2					7599312	
V3,V4					9024636	
V5					7599312	
V6					9024636	
V7					7599312	
V8,V9					9024636	
V10					7599312	
V11					9024636	

MEASUREMENT NOTES

1. General

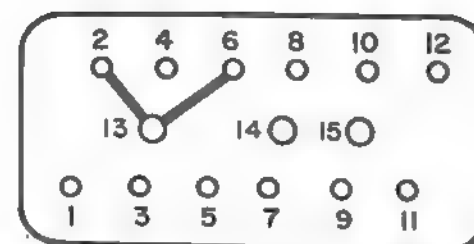
- Measurements are made with all variable resistors adjusted for normal operation and all tubes in sockets.
- Notation 3 to 4 in the Pin column indicates that measurement is made between pins 3 and 4; notation 4, 5 to 8 indicates that measurement is made between pin 4 and pin 8 or pin 5 and pin 8.
- All values given are typical.

2. Voltage

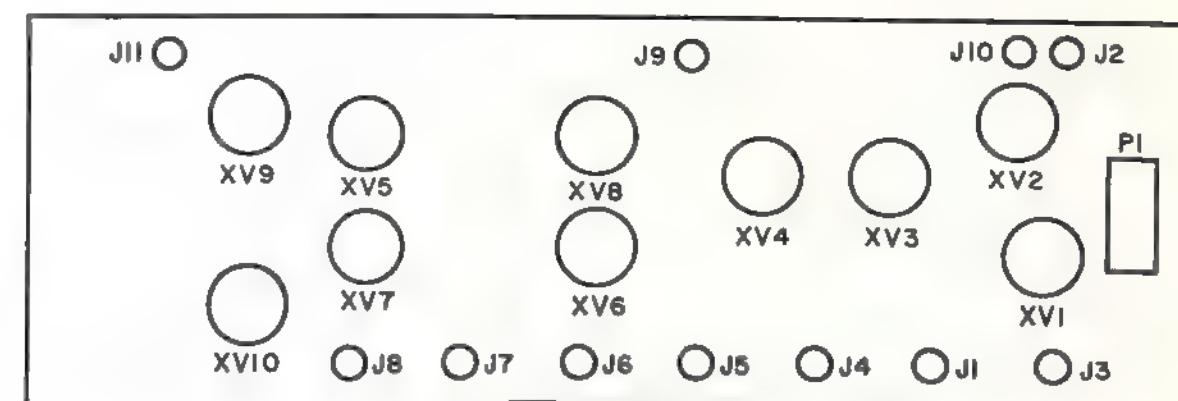
- Measurements are made with system energized through low voltage condition and with cables removed from J1, J2, J3, J4, J5, J6, J9, and J10.
- Measurements are made with electronic multimeter TS-505/U using the scale that permits reading nearest full scale.
- Voltages are +dc measured to ground unless otherwise indicated.

3. Resistance

- Measurements are made with multimeter TS-352/U using the scale that permits reading nearest midscale.
- Measurements are made with all external cables disconnected and connector P1 strapped as indicated.
- Resistances are measured to ground unless otherwise indicated.



PIN STRAPPING ARRANGEMENT FOR P1



BOTTOM VIEW OF CHASSIS

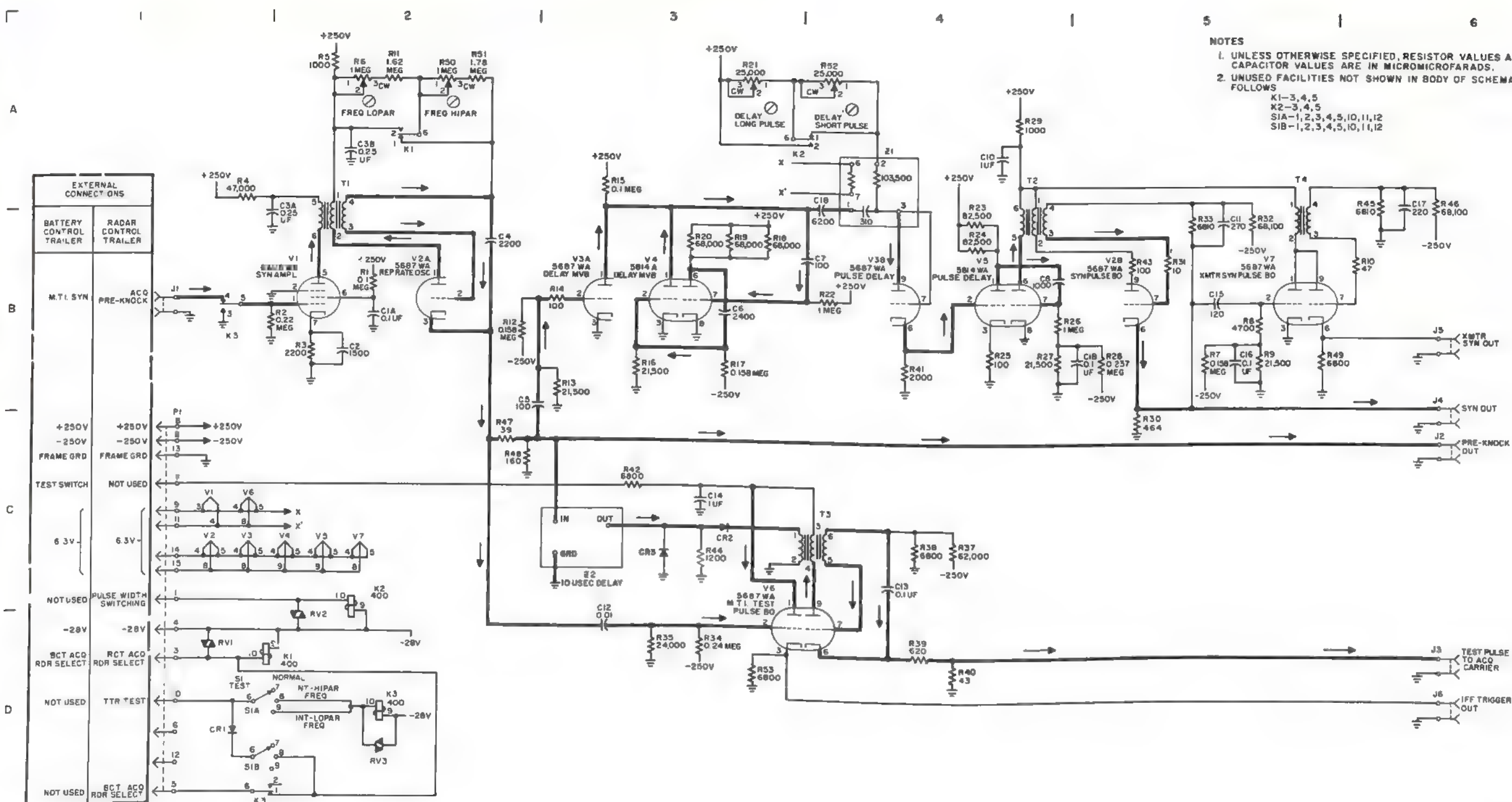
Ref desig	Socket	Tube	Tube type	Tube function	Plate			Suppressor			Screen			Control			Cathode			Filament		
					Pin	Volts	Ohms	Pin	Volts	Ohms	Pin	Volts	Ohms	Pin	Volts	Ohms	Pin	Volts	Ohms	Pin	Volts	Ohms
XV1	V1		5725/6AS6W	Coincidence amplifier	5	150	2,800	7	-5.1	262,000	6	150	100	1	-10	494,000	2	0	0	3 to 4	6.3 ac	< 1
XV2	V2		5725/6AS6W	Coincidence amplifier	5	150	5,600	7	-12.3	484,000	6	150	56	1	-9.5	480,000	2	0	0	3 to 4	6.3 ac	< 1
XV3	V3		6AH6	Clipper	5	136	2,800	Same as cathode			6	150	100	1	-2.5	4,600	2, 7	0	0	3 to 4	6.3 ac	< 1
XV4	V4		6AH6	Marker amplifier	5	150	1,200	Same as cathode			6	150	10	1	-6.2	478,000	2, 7	0	160	3 to 4	6.3 ac	< 1
XV5	V5		6AH6	Video amplifier	5	140	1,900	Same as cathode			6	150	100	1	0	20 Δ	2, 7	3	178	3 to 4	6.3 ac	< 1
XV6	V6		6AH6	Clipper	5	140	1,900	Same as cathode			6	150	10	1	-1.8	200,000	2, 7	0.8	120	3 to 4	6.3 ac	< 1
XV7	V7		5687WA	Cathode follower	1	150	68							2	-6.5	8,000 Δ	3	3	1,000	4, 5 to 8	6.3 ac	< 1
					9	150	68							7	-6.5	8,200 Δ	6	3	1,000			
XV8	V8		5687WA	Amplifier mixer	1	150	560							2	-6.5	2,900 Δ	3	0	0	4, 5 to 8	6.3 ac	< 1
					9	150	560							7	-6.5	2,900 Δ	6	0.5	68			
XV9	V9		6AH6	Video amplifier	5	138	1,600	Same as cathode			6	150	100	1	0	20 Δ	2, 7	1.8	178	3 to 4	6.3 ac	< 1
XV10	V10		5687WA	Cathode follower	1	150	68							2	-6.5	8,000 Δ	3	3	1,000	4, 5 to 8	6.3 ac	< 1
					9	150	68							7	-6.5	8,200 Δ	6	3	1,000			

< Less than. Δ Reverse meter leads if reading is not obtained.

Figure 92A (U). Video and mark mixer 9145581—voltage and resistance chart. (U)

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■ **Figure 93 (U).** Acquisition-track synchronizer 9989992—schematic diagram (U).

Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
C1A, C1B	0.1 uf	+20 -10		600	CP69B4EF104V1	
C2	1500	10		500	CM30B152JN3	
				600	CP69B4EF254V1	
C3A, C3B	0.25 uf	+20 -10		600	CP69B4EF254V1	
C4	2200	2		500	CM30E222GN3	
C5	100	10		500	CM15B101KN3	
C6	2400	5		500	CM30D242JN3	
C7	100	5		500	CM25E101JN3	
C8	1000	10		500	CM25B102JN3	
C10	1 uf	10		600	CP69B1EF105K1	
C11	270	5		500	CM15B271JN3	
C12	0.01	10		300	CM35B103JN3	
C13	0.1 uf	10		600	CP28A1EF104K1	
C14	1 uf	10		600	CP69B1EF105K1	
C15	120	10		500	CM15B121KN3	
C16	0.1 uf	20		200	8023769	
C17	220	5		500	CM15B221JN3	
C18	6200	2		500	CM35E622GN3	
CR1					9011788	1N1415
CR2, CR3					9139089	1N672
J1 thru J6					8531071	UG-625B/U
K1 thru K3					9011925	
P1	400				7598934	
R1	0.1 meg	10	1/2		MS35043-25	RC20GF104K
R2	0.22 meg	10	1/2		MS35043-27	RC20GF224K
R3	2200	10	1/2		MS35043-15	RC20GF222K
R4	47,000	10	1/2		MS35043-23	RC20GF473J
R5	1000	10	1/2		MS35043-13	RC20GF102K
R6	1 meg	20	2		9138734	
R7	0.158 meg	1	1		9024876	
R8	4700	10	1/2		MS35043-17	RC20GF472J
R9	21,500	1	1/2		9011212	
R10	47	10	12		MS35043-5	RC20GF470K
R11	1.62 meg	1	1		9137393	
R12	0.158 meg	1	1		9024876	
R13	21,500	1	1/2		9011212	
R14	100	10	1/2		MS35043-7	RC20GF101K
R15	0.1 meg	1	1/2		9002937	
R16	21,500	1	1/2		9011212	
R17	0.158 meg	1	1		9024876	
R18 thru R20	68,000	10	2		MS35045-24	RC42GF683K
R21	25,000	5	3		8010404	
R22	1 meg	1	1		8519468	
R23, R24	82,500	1	2		9024879	
R25	100	1	1/4		9010391	
R26	1 meg	10	1/2		MS35043-31	RC20GF105K
R27	21,500	1	1/2		9011212	
R28	0.237 meg	1	1		9010166	
R29	1000	10	1/2		MS35043-13	RC20GF102K
R30	464		1/2		8626920	
R31	10	10	1/2		MS35043-1	RC20GF100K
R32	68,100	1	2		9137399	
R33	6810	1	1/2		9010171	
R34	0.24 meg	5	1		MS35044-158	RC32GF244J
R35	24,000	5	1/2		MS35043-120	RC20GF243J
R37	62,000	5	2		MS35045-130	RC42GF623J
R38	6800	5	1/2		MS35043-107	RC20GF682J
R39	620	5	1/2		MS35043-82	RC20GF621J
R40	43	5	1/2		MS35043-54	RC20GF430J

Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol ±%	Watts	Volts		
R41	2000	1	1/4		9011607	
R42	6800	5	1/2		MS35043-107	RC20GF682J
R43	100	10	1/2		MS35043-7	RC20GF101K
R44	1200	5	1/2		MS35043-89	RC20GF122J
R45	6810	1	1/2		9010171	
R46	68,100	1	2		9137399	
R47	39	5	1/2		MS35043-53	RC20GF390J
R48	160	5	1/2		MS35043-68	RC20GF161J
R49	6800	5	1/2		MS35043-107	RC20GF682J
R50	1 meg	20	2		9138734	
R51	1.78 meg	1	1		9144101	
R52	25,000	5	3		8010404	
R53	6800	5	1/2		MS35043-107	RC20GF682J
RV1 thru RV3					9024874	
S1					9138804	
T1					7599403	
T2					8017765	
T3					7599403	
T4					8518481	
V1					J6AU6WB	
V2, V3					5687WA	
V4, V5					5814A	
V6, V7					5687WA	
Z1					8010775	
Z2					9986735	

(U) Acquisition-Track Synchronizer 9989392—Voltage and Resistance Chart

1. General

a. Measurements are made with all variable resistors adjusted for normal operation and all tubes in sockets.

b. Notation 3, 4 in the Pin column indicates that measurement is made between pins 3 and 4; notation 4, 5 to 8 indicates that measurement is made between pin 4 and pin 8 or pin 5 and pin 8; notation 4, 5 to 9 indicates that measurement is made between pin 4 and pin 9 or pin 5 and pin 9.

2. Voltage

a. Measurements are made with system energized through low voltage condition and with cables removed from J1 through J6.

b. Measurements are made with electronic multimeter TS-505/U using the scale that permits reading nearest full scale.

c. Voltages are +dc measured to ground unless otherwise indicated.

3. Resistance

a. Measurements are made with multimeter TS-352/U using the scale that permits reading nearest midscale.

b. Measurements are made with all external cables disconnected.

c. Resistances are measured to ground unless otherwise indicated.

d. On connector P1, strap pins 2, 7, 8, and 13 together.

Ref desig		Tube type	Tube function	Plate			Suppressor			Screen			Control			Cathode			Filament		
Socket	Tube			Pin	Volts	Ohms	Pin	Volts	Ohms	Pin	Volts	Ohms	Pin	Volts	Ohms	Pin	Volts	Ohms	Pin	Volts	Ohms
XV1	V1	6AU6WB	Sync amplifier	5	185	47,000	2	0	0	6	185	100,000	1	0	0.22 meg	7	4.9	2,200	3 to 4	6.3 ac	< 1
XV2	V2A	5687WA	Rep rate blocking oscillator	1	250	1,000							2	-82	2.12 meg	3	—	200	4, 5 to 8	6.3 ac	< 1
	V2B		Sync pulse blocking oscillator	9	250	1,100							7	-24	6,200	6	-1.4	430			
XV3	V3A	5687WA	Delay MVB	1	235	0.1 meg							2	-30	19,000	3	0	0	4, 5 to 8	6.3 ac	< 1
	V3B		Pulse delay	9	2.8	0.115 meg							7	2.8	0.115 meg	6	2.6	2,000			
XV4	V4A	5814A	Delay MVB	1	235	0.1 meg							2	-30	19,000	3	0	0	4, 5 to 9	6.3 ac	< 1
	V4B			6	75	23,000							7	0	1 meg	8	0	0			
XV5	V5A	5814A	Pulse delay amplifier	1	27	41,000							2	2.6	2,000	3	0.54	100	4, 5 to 9	6.3 ac	< 1
	V5B			6	250	1,000							7	-5	1.2 meg	8	0	0			
XV6	V6A	5687WA	MTI test pulse blocking oscillator	1	0	6,800							2	-22	22,000	3	0	6,800	4, 5 to 8	6.3 ac	< 1
	V6B			9	0	6,800							7	-26	6,150	6	0	620			
XV7	V7A	5687WA	Transmitter sync blocking oscillator	1	250	1,000							2	-30	23,000	3	0	0	4, 5 to 8	6.3 ac	< 1
	V7B			9	250	1,000							7	-23	6,400	6	0	6,800			

< Less than.

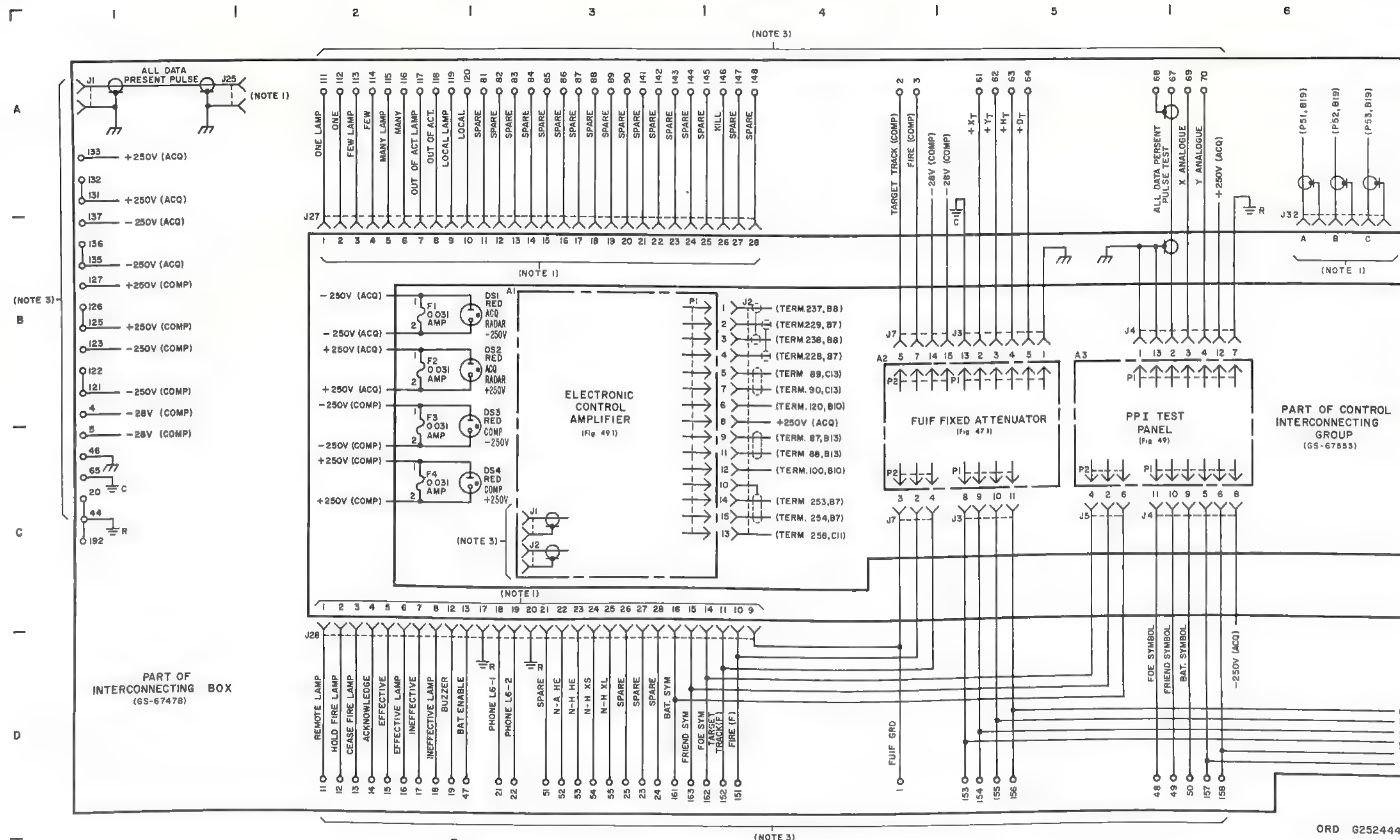


Figure 94 (U). Auxiliary acquisition control interconnecting group 9998063 and auxiliary acquisition control interconnecting box 9998460—schematic diagram (sheet 1 of 5) (U).

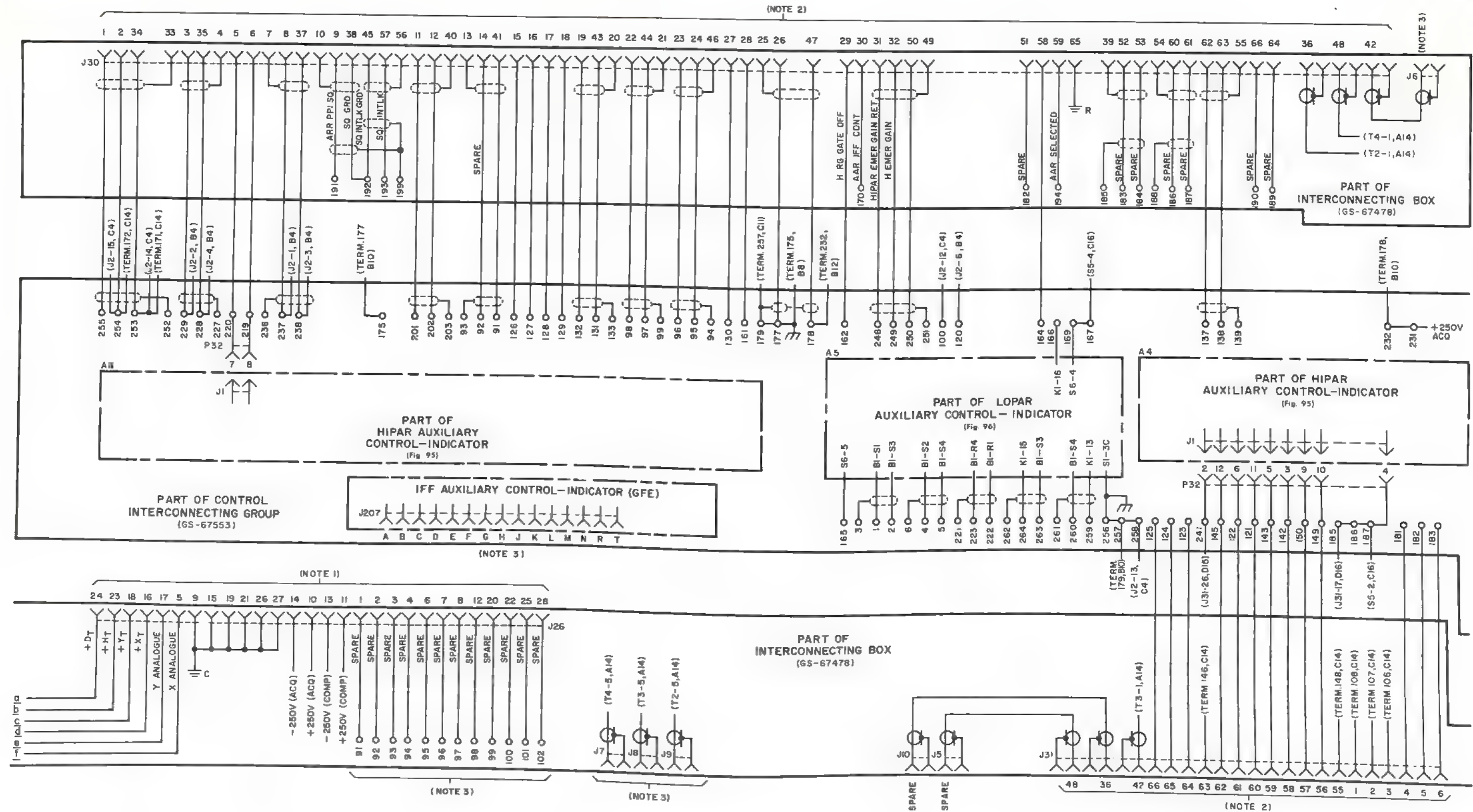


Figure 94 (U). Continued (sheet 2 of 5).

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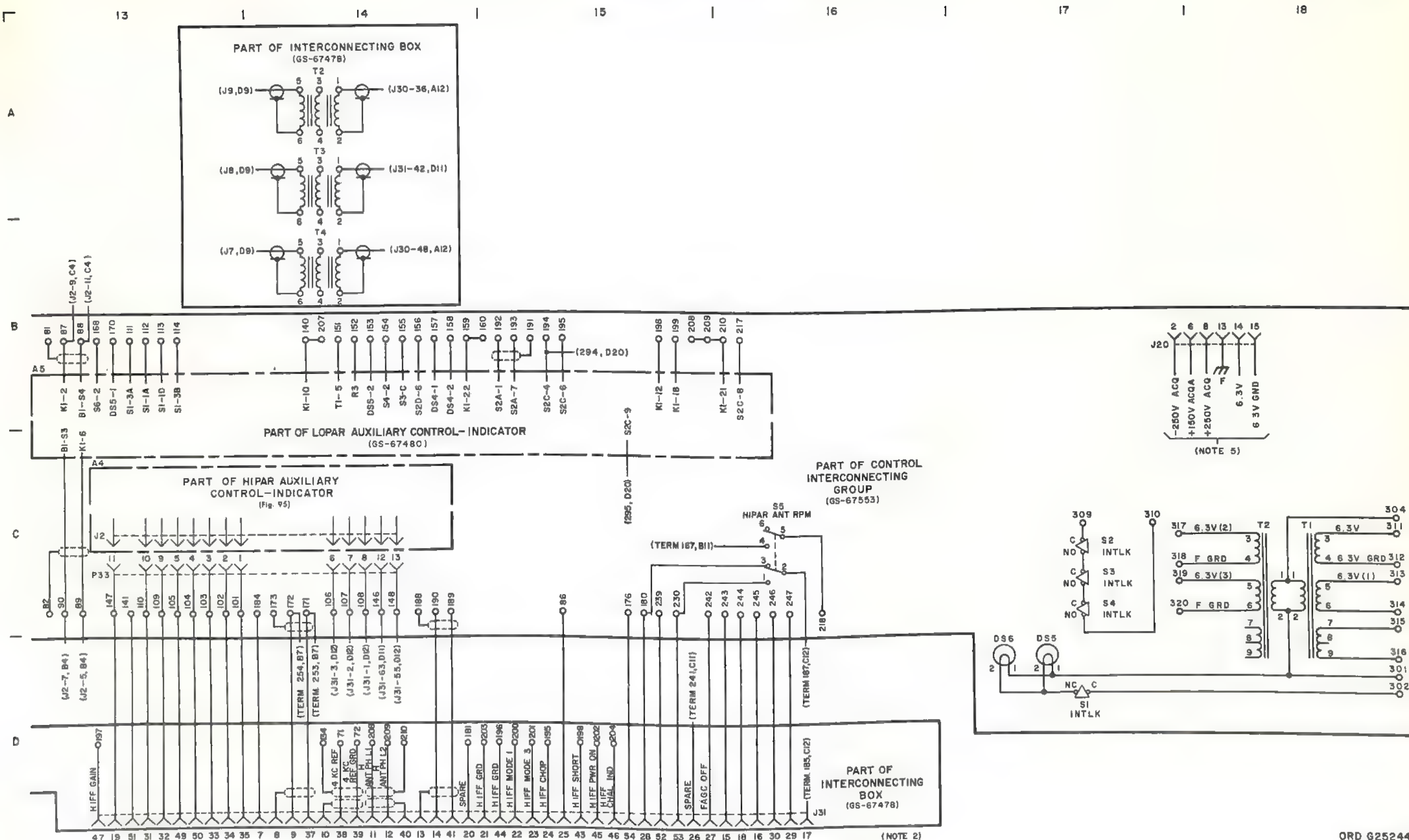
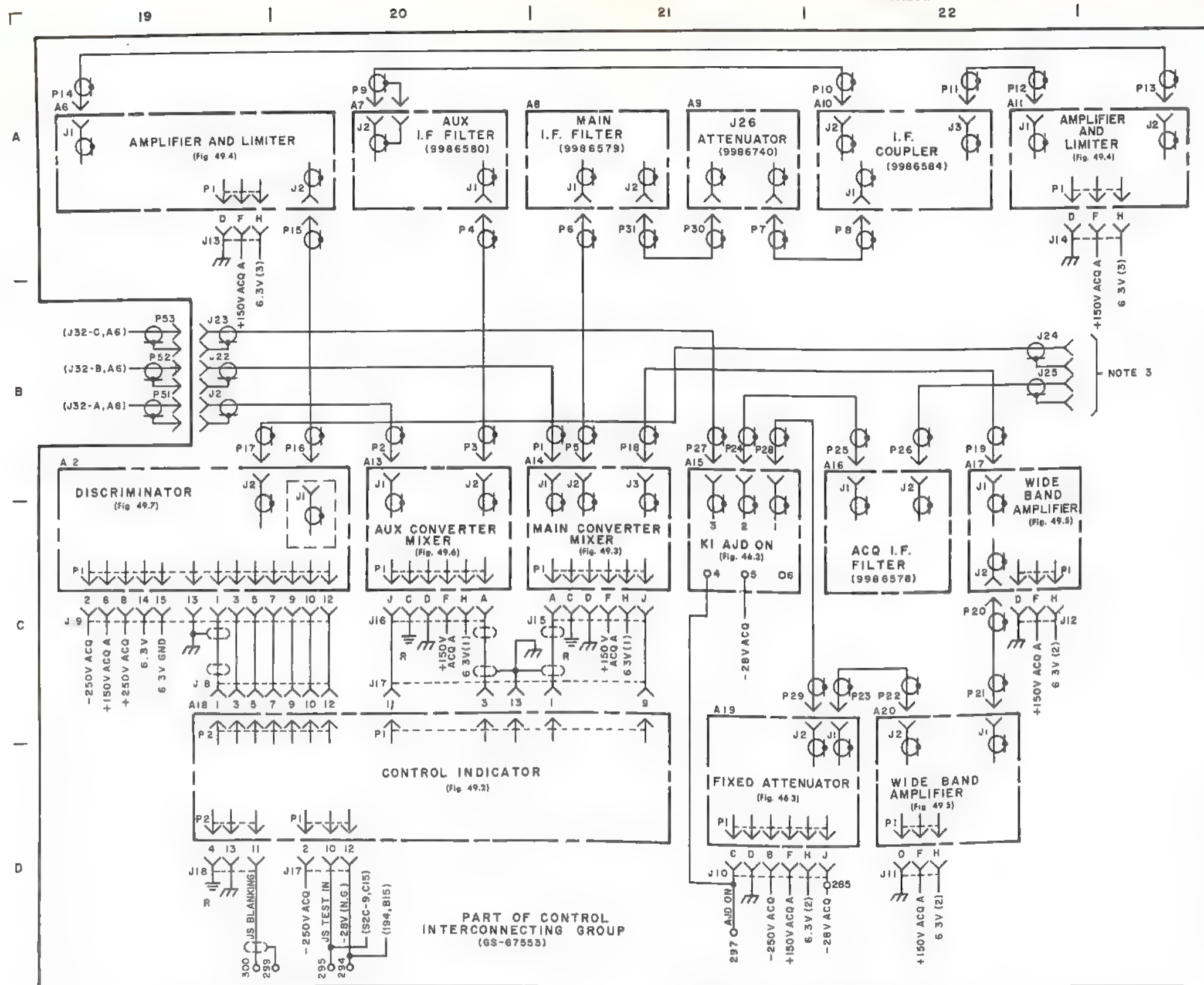


Figure 94 (U). Continued (sheet 3 of 5).

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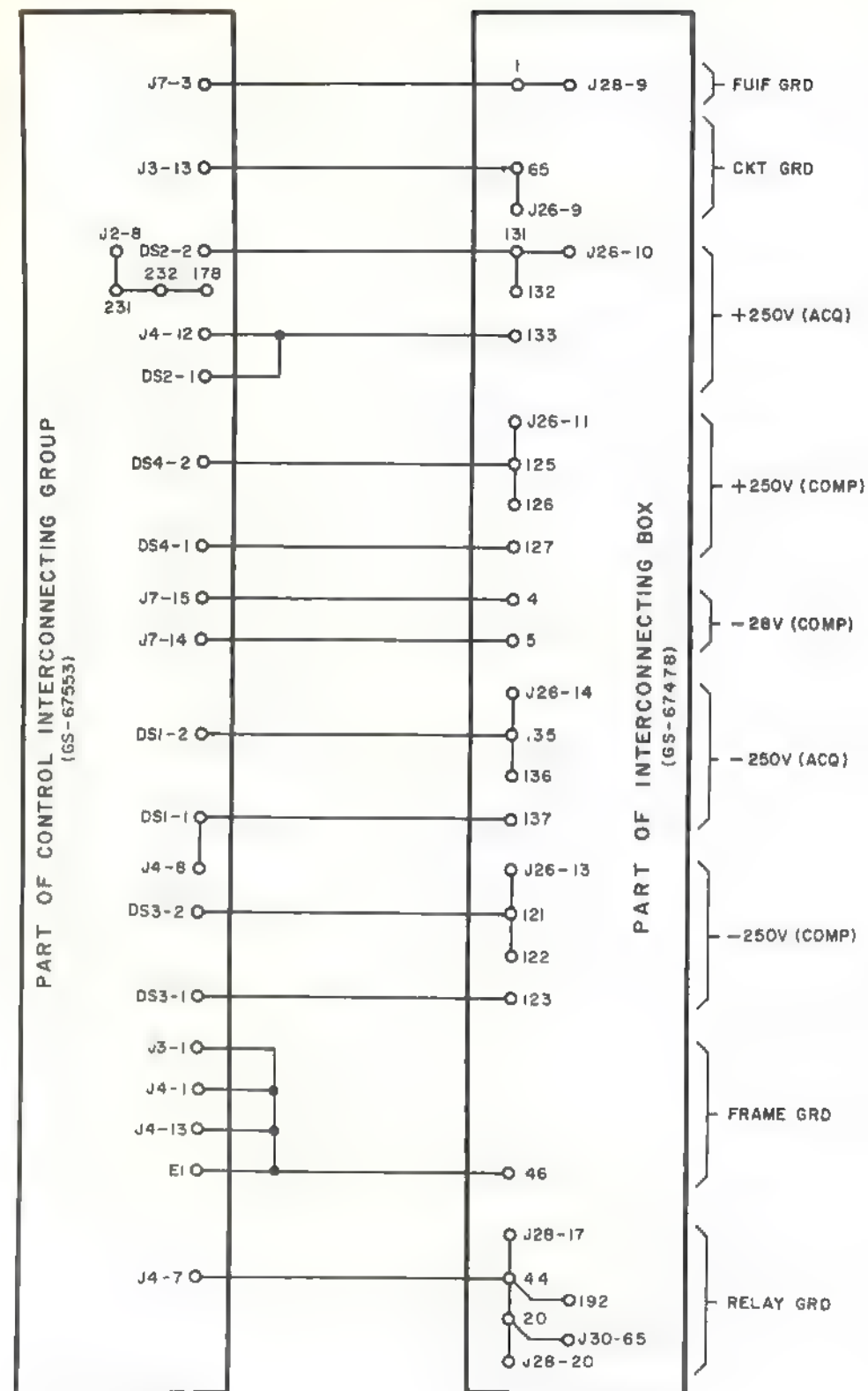


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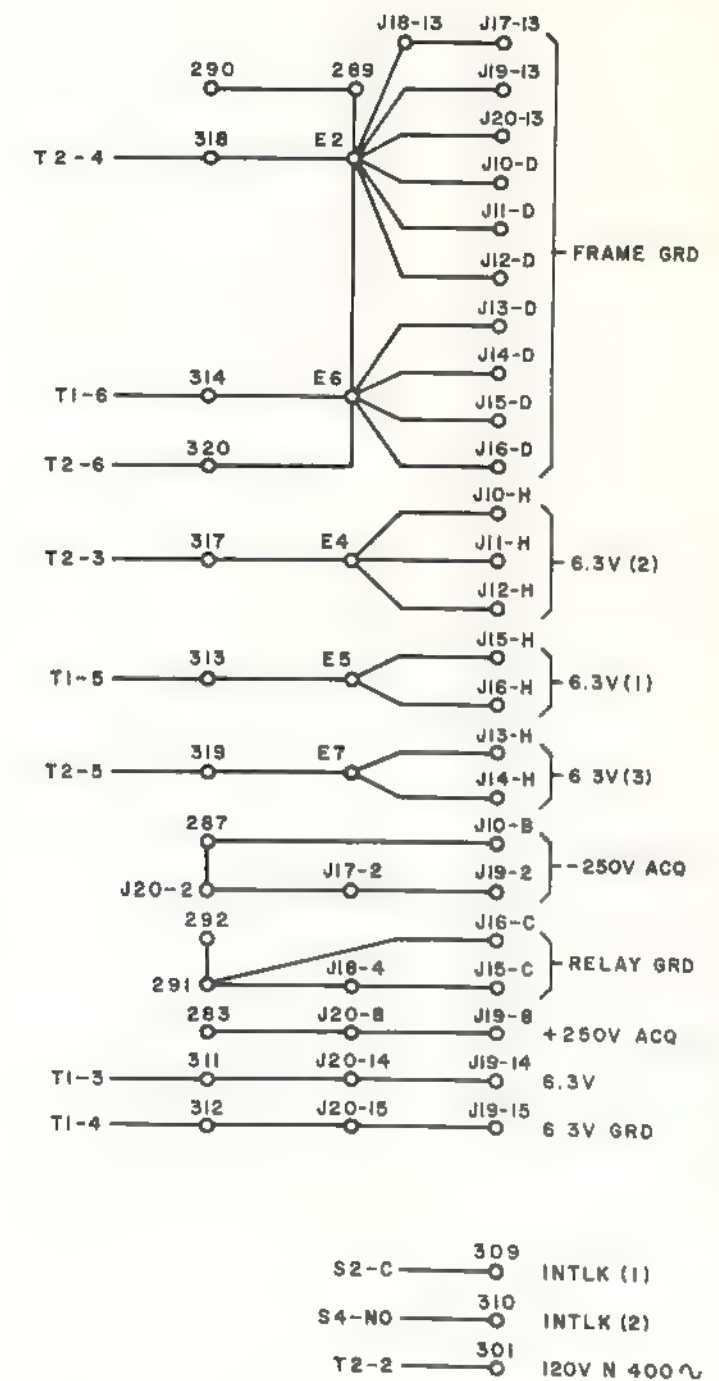
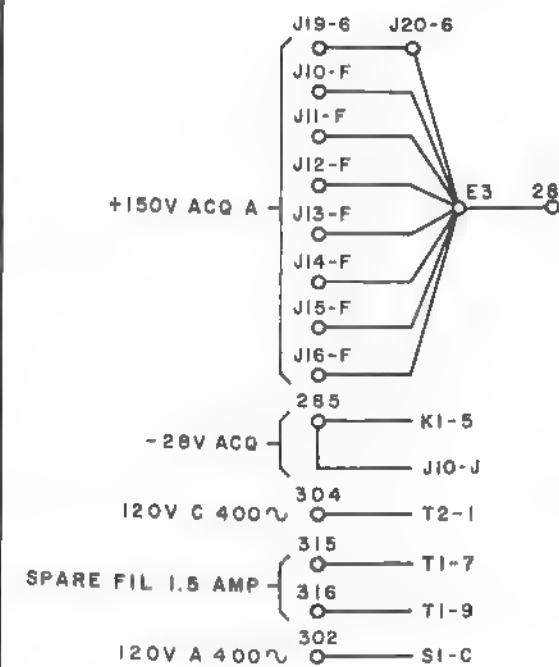
- 1 REFER TO TM9-1430-254-20/2
- 2 REFER TO TM9-1430-254-20/3
3. REFER TO SCHEMATIC OF TRAILER MOUNTED DIRECTOR STATION (GS-67471) 9993053
4. UNUSED FACILITIES NOT SHOWN IN BODY OF SCHEMATIC ARE AS FOLLOWS
J3-6,7,12,14,15
J4-8,14,15
J5-1,3,5,7,8,9,10,11,12,13,14,15
J7-1,6,8,9,10,11,12,13
5. CONNECTOR J20 IS NOT USED IN THIS MODIFICATION AND IS PROVIDED FOR FUTURE USE
6. UNUSED FACILITIES ADDED BY THE LAJD MODIFICATION AND NOT SHOWN IN BODY OF SCHEMATIC ARE AS FOLLOWS
CPI
J10-A,E
J11-A,B,C,E,J
J12-A,B,C,E,J
J13-A,B,C,E,J
J14-A,B,C,E,J
J15-B,E
J16-B,E
J17-4,5,6,7,8,14,15
J18-2,6,8,14,15
J19-4,11
J20-1,3,4,5,7,9,10,11,12
K1-6
7. TERMINAL LOCATED ON SHEET 5.

Figure 94 (U). Continued (sheet 4 of 5).

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**PART OF CONTROL
INTERCONNECTING GROUP**
(GS-67553)



ORD G252448

Figure 94 (U). Continued (sheet 5 of 5).

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(U) Index of Terminals— Auxiliary Acquisition Interconnecting Box								(U) Index of Terminals—Auxiliary Acquisition Interconnecting Group											
Terminal	Location	Terminal	Location	Terminal	Location	Terminal	Location	Terminal	Location	Terminal	Location	Terminal	Location	Terminal	Location	Terminal	Location	Terminal	Location
1	D4	55	D3	109	NC	163	D3	1	C10	55	NC	109	C13	163	NC	217	B16	271	NC
2	A4	56	NC	110	NC	164	NC	2	C10	56	NC	110	C13	164	B11	218	C16	272	NC
3	A4	57	NC	111	A2	165	NC	3	C10	57	NC	111	B13	165	C10	219	B7	273	NC
4	B1	58	NC	112	A2	166	NC	4	C10	58	NC	112	B13	166	B11	220	B7	274	NC
5	C1	59	NC	113	A2	167	NC	5	C10	59	NC	113	B13	167	B11	221	C10	275	NC
6	NC	60	NC	114	A2	168	NC	6	C10	60	NC	114	B13	168	B13	222	C11	276	NC
7	NC	61	A5	115	A2	169	NC	7	NC	61	NC	115	NC	169	B11	223	C10	277	NC
8	NC	62	A5	116	A2	170	A10	8	NC	62	NC	116	NC	170	B13	224	NC	278	NC
9	NC	63	A5	117	A2	171	NC	9	NC	63	NC	117	NC	171	C14	225	NC	279	NC
10	NC	64	A5	118	A2	172	NC	10	NC	64	NC	118	NC	172	C14	226	NC	280	NC
11	D2	65	C1	119	A2	173	NC	11	NC	65	NC	119	NC	173	C14	227	B7	281	Note 7
12	D2	66	NC	120	A2	174	NC	12	NC	66	NC	120	B10	174	NC	228	B7	282	NC
13	D2	67	A6	121	B1	175	NC	13	NC	67	NC	121	C12	175	B8	229	B7	283	Note 7
14	D2	68	A5	122	B1	176	NC	14	NC	68	NC	122	C12	176	C15	230	C15	284	NC
15	D2	69	A6	123	B1	177	NC	15	NC	69	NC	123	C11	177	B10	231	B12	285	D21
16	D2	70	A6	124	NC	178	NC	16	NC	70	NC	124	C11	178	B10	232	B12	286	NC
17	D2	71	D14	125	B1	179	NC	17	NC	71	NC	125	C11	179	B10	233	NC	287	Note 7
18	D2	72	D14	126	B1	180	NC	18	NC	72	NC	126	B9	180	C15	234	NC	288	NC
19	D2	73	NC	127	B1	181	D14	19	NC	73	NC	127	B9	181	C12	235	NC	289	Note 7
20	C1	74	NC	128	NC	182	A11	20	NC	74	NC	128	B9	182	C12	236	B3	290	Note 7
21	D3	75	NC	129	NC	183	A11	21	NC	75	NC	129	B9	183	C12	237	B8	291	Note 7
22	D3	76	NC	130	NC	184	A11	22	NC	76	NC	130	B9	184	C14	238	B8	292	Note 7
23	D3	77	NC	131	A1	185	A11	23	NC	77	NC	131	B9	185	B12	239	C15	293	NC
24	D3	78	NC	132	A1	186	A11	24	NC	78	NC	132	B9	186	C12	240	NC	294	D20
25	D3	79	NC	133	A1	187	A11	25	NC	79	NC	133	B9	187	C12	241	C11	295	D20
26	NC	80	NC	134	D14	188	A11	26	NC	80	NC	134	NC	188	C14	242	C15	296	NC
27	NC	81	A3	135	B1	189	A12	27	NC	81	B13	135	NC	189	C14	243	C15	297	D21
28	NC	82	A3	136	B1	190	A12	28	NC	82	C13	136	NC	190	C14	244	C16	298	NC
29	NC	83	A3	137	B1	191	A8	29	NC	83	NC	137	B11	191	B15	245	C16	299	D20
30	NC	84	A3	138	NC	192	A8	30	NC	84	NC	138	B11	192	B15	246	C16	300	D19
31	NC	85	A3	139	NC	193	A8	31	NC	85	NC	139	B12	193	B15	247	C16	301	D18
32	NC	86	A3	140	NC	194	A11	32	NC	86	C15	140	B14	194	B15	248	B10	302	D18
33	NC	87	A3	141	A3	195	D15	33	NC	87	B13	141	C13	195	B15	249	B10	303	NC
34	NC	88	A3	142	A3	196	D15	34	NC	88	B13	142	C12	196	NC	250	B10	304	C18
35	NC	89	A3	143	A3	197	D13	35	NC	89	C13	143	C12	197	NC	251	B10	305	NC
36	NC	90	A3	144	A3	198	D15	36	NC	90	C13	144	NC	198	B15	252	B7	306	NC
37	NC	91	D8	145	A4	199	A8	37	NC	91	B8	145	C11	199	B15	253	B7	307	NC
38	NC	92	D8	146	A4	200	D15	38	NC	92	B8	146	C14	200	NC	254	B7	308	NC
39	NC	93	D8	147	A4	201	D15	39	NC	93	B8	147	C13	201	B8	255	B7	309	C17
40	NC	94	D8	148	A4	202	D15	40	NC	94	B9	148	C14	202	B8	256	C11	310	C17
41	NC	95	D8	149	NC	203	D14	41	NC	95	B9	149	C12	203	B8	257	C11	311	C18
42	NC	96	D8	150	NC	204	D15	42	NC	96	B9	150	C12	204	NC	258	C11	312	C18
43	NC	97	D8	151	D4	205	NC	43	NC	97	B9	151	B14	205	NC	259	C11	313	C18
44	C1	98	D8	152	D4	206	NC	44	NC	98	B9	152	B14	206	NC	260	C11	314	C18
45	NC	99	D8	153	D5	207	NC	45	NC	99	B9	153	B14	207	B14	261	C11	315	D18
46	C1	100	D9	154	D5	208	D14	46	NC	100	B10	154	B14	208	B15	262	C11	316	D18
47	D2	101	D9	155	D5	209	D14	47	NC	101	C13	155	B14	209	B15	263	C11	317	C17
48	D5	102	D9	156	D5	210	D14	48	NC	102	C13	156	B14	210	B16	264	C11	318	C17
49	D6	103	NC	157	D6			49	NC	103	C13	157	B14	211	NC	265	NC	319	C17
50	D6	104	NC	158	D6			50	NC	104	C13	158	B14	212	NC	266	NC	320	C17
51	D3	105	NC	159	NC			51	NC	105	C13	159	B14	213	NC	267	NC		
52	D3	106	NC	160	NC			52	NC	106	C14	160	B15	214	NC	268	NC		
53	D3	107	NC	161	D3			53	NC	107	C14	161	B10	215	NC	269	NC		
54	D3	108	NC	162	D4			54	NC	108	C14	162	B10	216	NC	270	NC		

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(U) Auxiliary Acquisition Control Interconnecting Group 9998063 and Auxiliary
Acquisition Control Interconnecting Box 9996460—Apparatus List

Ref desig	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol \pm %	Watts	Volts		
Items listed below are part of GS-67553						
A1					9990729	GS-64261
A2					9984404	GS-65849
A3					9136426	GS-57296
A4					9996155	GS-66095
A5					9989496	GS-67480
A6					9156529	GS-64186
A7					9986580	Filter (52 mc)
A8					9986579	Filter (48 mc)
A9					9986740	Attenuator (J26)
A10					9986584	IF coupler
A11					9156529	GS-64186
A12					9990650	GS-64183
A13					9990588	GS-64182
A14					9990577	GS-64181
A15					9986612	K1 ADJ
A16					9986578	Filter (60 mc)
A17					9990700	GS-64198
A18					9990687	GS-64196
A19					9993003	GS-66070
A20					9990700	GS-64198
DS1 thru DS4					7605718	
DS5					9005455	
DS6					9005457	
F1 thru F4					MS90078-2	
J2 thru J6					9150422	Body
J10 thru J16					8531068	
J17 thru J20					9150422	
J21 thru J25					MS38731-910A	
P1 thru P31					MS35168-88D	
P32, P33					9150422	
S1 thru S4					7602749	
S5					MS35059-23	
T1, T2					7605345	
TB					9139028-1	
Items listed below are part of GS-67478						
J1 thru J10					MS35181-910A	
J25					MS35181-910A	
J26 thru J28					7632527	
J30					9144371	
J31					9138667	
J32					8016481	
P51 thru P53					MS35168-1	
T2 thru T4					8017765	
TB					7634159	

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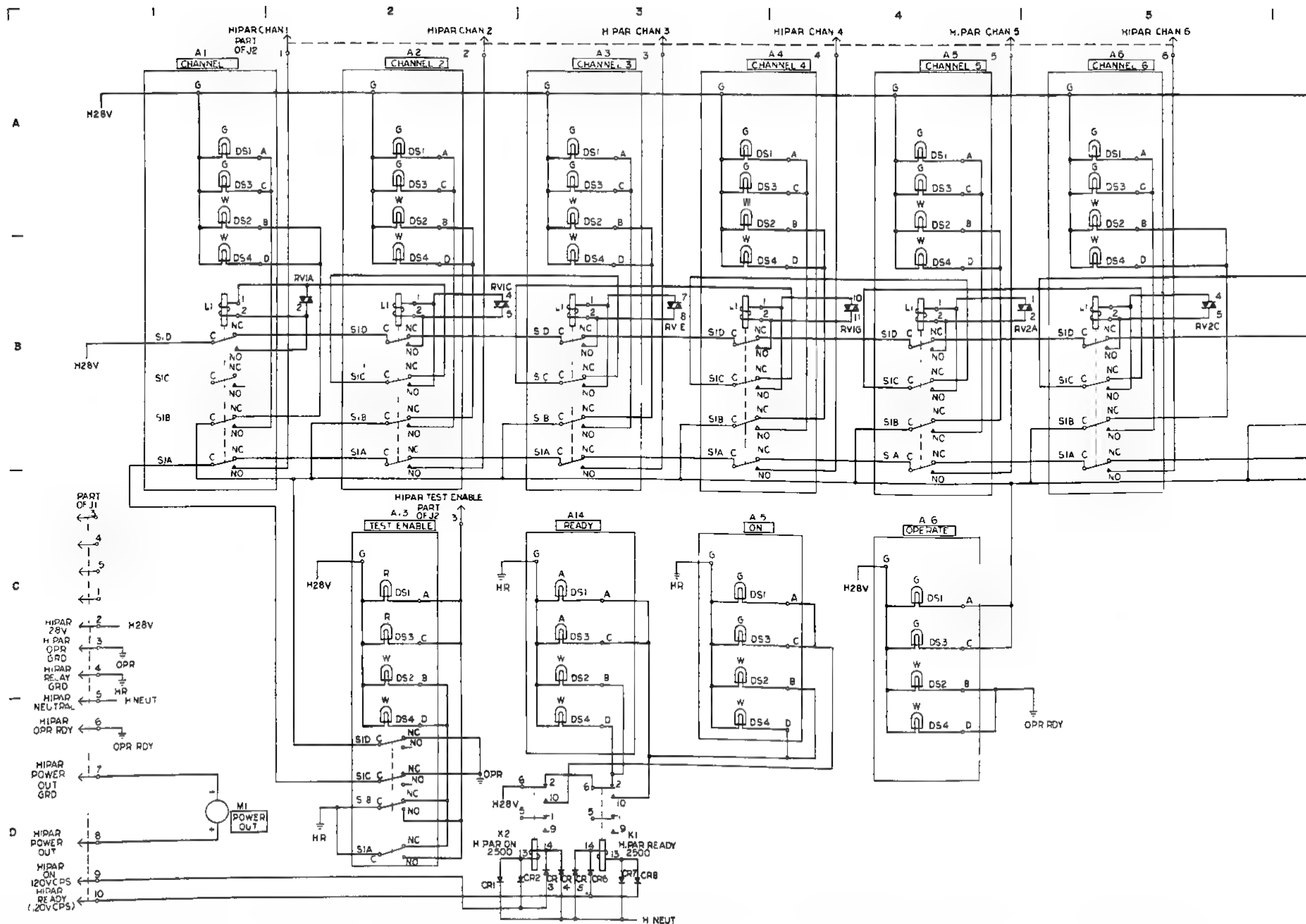


Figure 95 (U). HIPAR auxiliary control-indicator 9996155—schematic diagram (sheet 1 of 2) (U).

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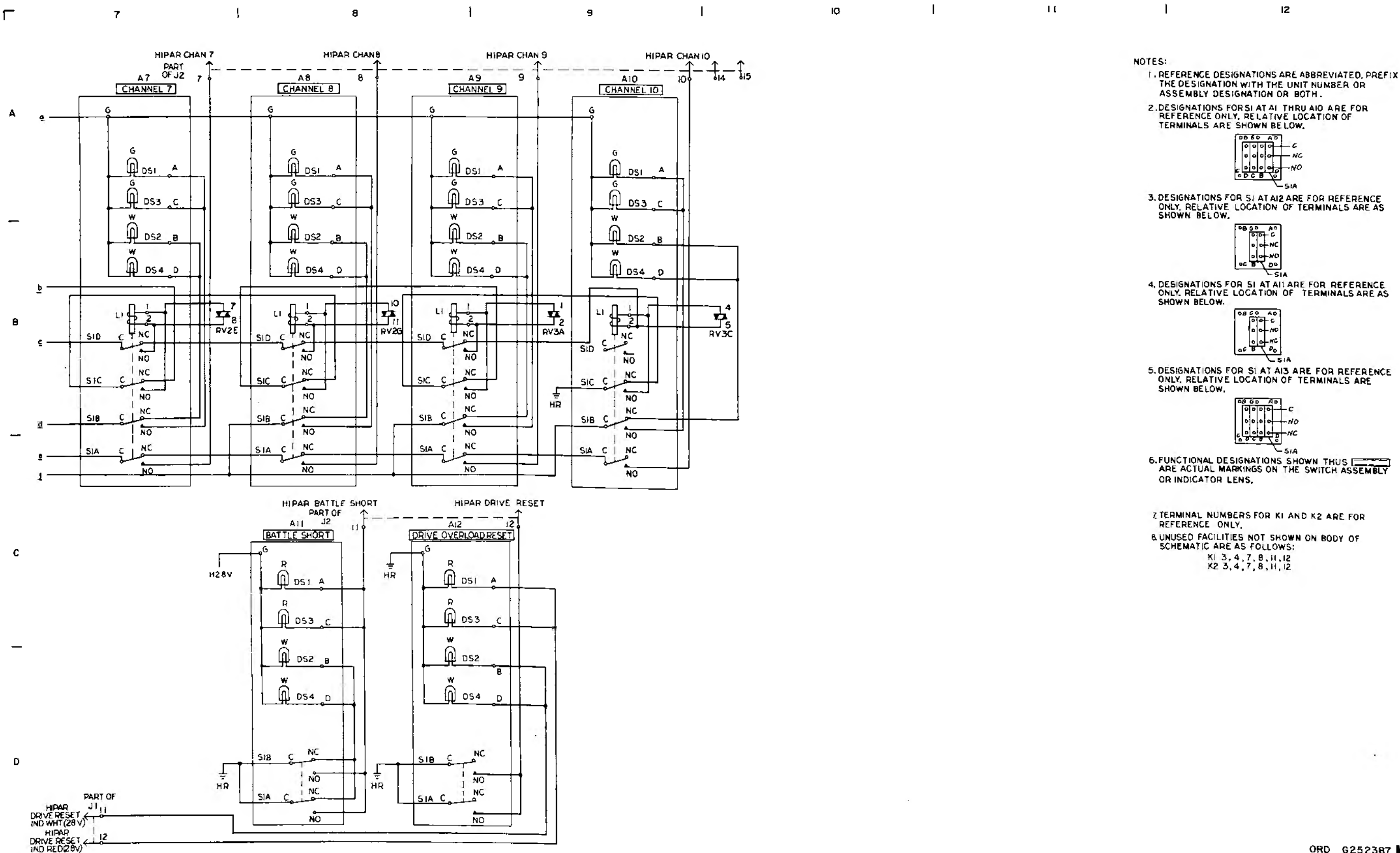
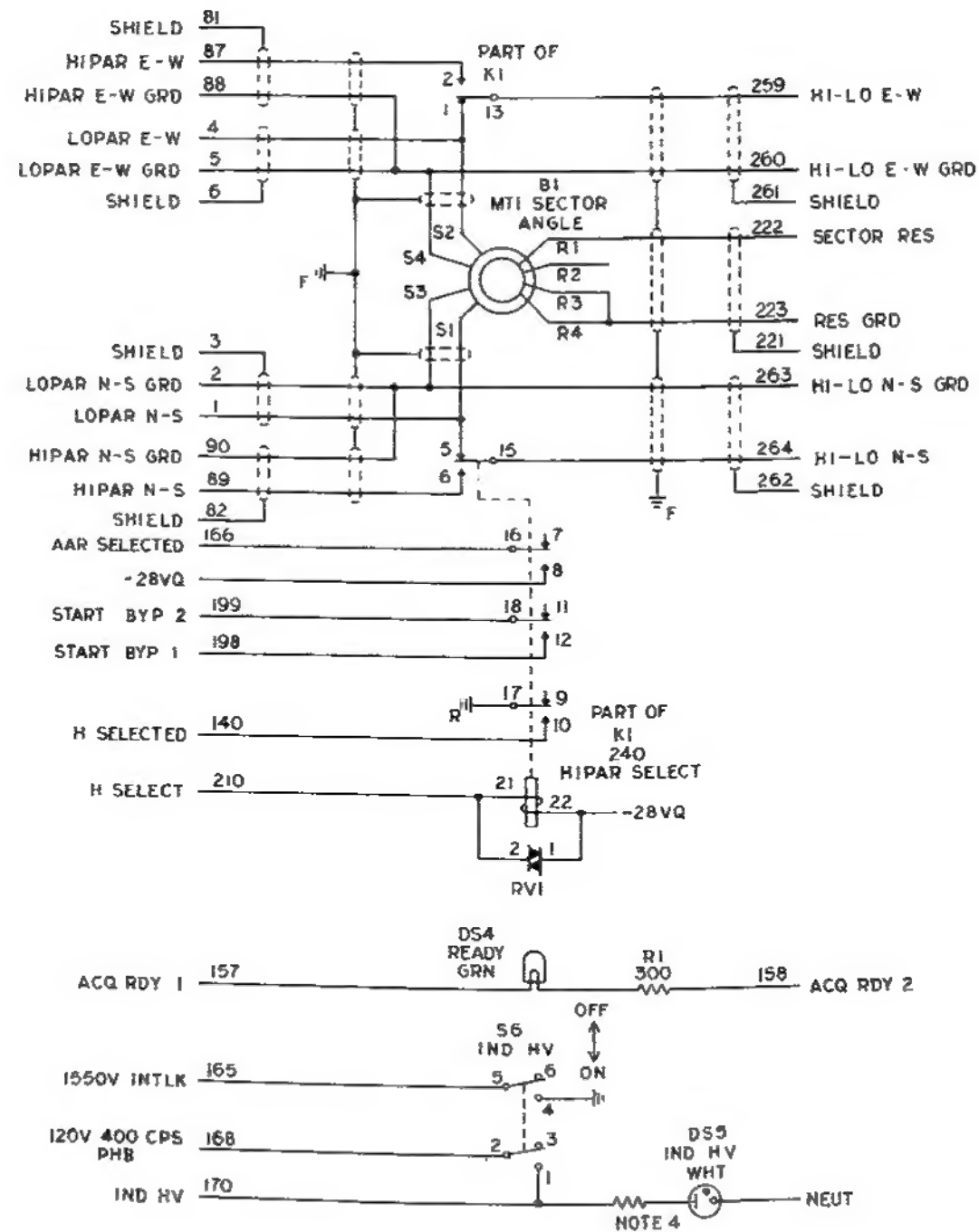
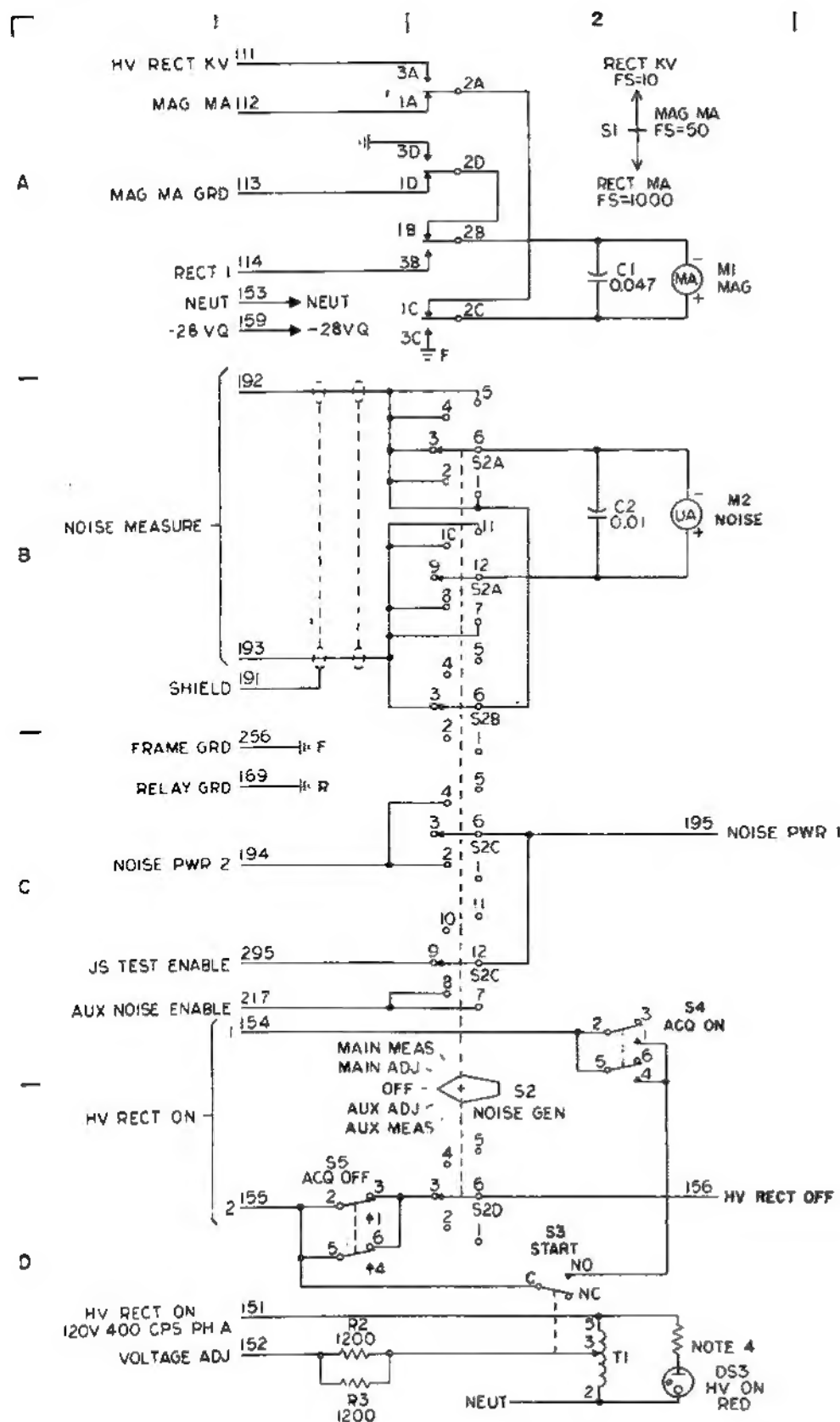


Figure 95 (U). Continued (sheet 2 of 2).

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(U) HIPAR Auxiliary Control-Indicator 9986155—Apparatus List

Ref design	Value	Mfr's rating			Type, part, or drawing no.	Remarks
		Tol \pm %	Watts	Volts		
A1	2500				9986902	
A2					9986902-20	
A3					9986902-21	
A4					9986902-22	
A5					9986902-23	
A6					9986902-24	
A7					9986902-25	
A8					9986902-26	
A9					9986902-27	
A10					9986902-28	
A11					9986901-18	
A12					9986901-20	
A13					9986901-425	
A14					9986903-2	
A15					9986903-3	
A16					9986903	
J1, J2					9150421	
CR1 thru CR8					1N3191	
K1, K2					9986949	
M1					9976301	
RV1 thru RV3					7599075	



NOTES:

1. REFERENCE DESIGNATIONS ARE ABBREVIATED. PREFIX THE DESIGNATIONS WITH THE UNIT NUMBER OR ASSEMBLY DESIGNATION OR BOTH.
2. UNLESS OTHERWISE SPECIFIED, RESISTANCE VALUES ARE IN OHMS, CAPACITANCE VALUES IN MICROFARADS.
3. UNUSED FACILITIES NOT SHOWN IN BODY OF SCHEMATIC ARE AS FOLLOWS:
RVI-3,4
KI-3,4,14
S2B-7,8,9,10,11,12
S2D-7,8,9,10,11,12
4. RESISTORS ASSOCIATED WITH DS3 AND DS5 ARE INTEGRAL PARTS OF THE LAMPS.

Figure 96 (U). LOPAR auxiliary control-indicator 9989496—schematic diagram (U).

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TECHNICAL MANUAL

No. 9-1430-257-20

HEADQUARTERS,
DEPARTMENT OF THE ARMY
WASHINGTON, D. C., 7 October 1959

UNIT SCHEMATICS ACQUISITION RADAR SYSTEM (LESS HIPAR) (U)

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*This manual supersedes portions of TM 9-5090-3-1, 10 May 1957, including C1, 16 May 1958, and C2, 25 August 1958, as pertains to this manual.

**These changes supersede TB 9-1430-257-20/1, 8 January 1960; TB 9-1430-257-20/2, 5 February 1960; TB 9-1430-257-20/3, and TB 9-1430-257-20/4, 3 March 1960.

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